



UMEÅ UNIVERSITY

**AI Competence and Education at Umeå  
Universitet: What's next?  
Workshop March 2022**

Helena Lindgren, Karin Danielsson, Per Holm

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# AI COMPETENCE AND EDUCATION AT UMU: WHAT'S NEXT?

**This presentation includes a summary of the workshop, AI Competence of Sweden activities at UmU 2018-2021, and ongoing new efforts including WASP-ED and TAIGA**

## **Organisers:**

**AI Competence for Sweden work group at UmU -  
Helena Lindgren, Karin Danielsson, Per Holm**



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**AI COMPETENCE  
FOR SWEDEN**

# PROGRAMME

- 11.00-12.00 Introduction and summary of AI Competence activities, new efforts including WASP-ED – *Helena Lindgren, Per Holm, Juan Carlos Nieves, Andreas Theodorou*
- 12.00-12.10 TAIGA and AI Education – *Frank Dignum*
- 12.10-13.00 Lunch and discussions
- 13.00-13.45 Panel discussion – *Moderator: Karin Danielsson*
  - *Karolina Broman*, Chair of the Education Committee of the Faculty of Science and Technology
  - *Marlene Johansson Falck*, Vice Dean of the Faculty of Arts
  - *Madeleine Blusi*, Member of the Council for AI (MAI) at the Faculty of Medicine
  - *Ann-Louise Silfver*, Vice Dean, Faculty of Social Sciences
- 13.45-14.00 Summary and What's next?
- 14.00- Continued discussion and mingling



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AI COMPETENCE  
FOR SWEDEN

# AI COMPETENCE FOR SWEDEN

Summary of 2018-2021

Helena Lindgren, Karin Danielsson, Per Holm



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AI COMPETENCE  
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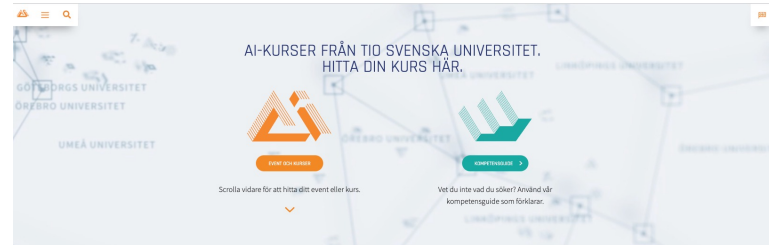
# AI COMPETENCE FOR SWEDEN

## ETT NATIONELLT INITIATIV FÖR UTBILDNING OCH KOMPETENSUTVECKLING INOM ARTIFICIELL INTELLIGENS

AI Competence for Sweden är ett nationellt initiativ för utbildning och kompetensutveckling inom artificiell intelligens. Regeringen lanserade initiativet 2018. Inom ramen för initiativet samverkar tio lärosäten för att skapa en kunskapsplattform och erbjuda kurser för yrkesverksamma.

[ai-competence.se](http://ai-competence.se)

Launched by the  
Government 2018



FORMAT		ÄMNESOMRÅDEN				ORF	
ELEMENTS OF AI	BUSINESS IMPLICATIONS OF AI FULL COURSE	BUSINESS IMPLICATIONS OF AI MAND COURSE	AI CLASS (MOOC)	HUMAN-CENTERED MACHINE LEARNING	AI AND LAW (MOOC)		
BASIC KNOWLEDGE ON MACHINE LEARNING (MOOC)	IMPACT FROM DIGITAL TRANSFORMATION MAND COURSE	IMPACT FROM DIGITAL TRANSFORMATION FULL COURSE	OPEN ONLINE COURSE: AI AND PROFESSIONS	AI BUSINESS AND THE FUTURE OF WORK (MOOC)	ARTIFICIAL INTELLIGENCE ETHICS AND SOCIETAL CHALLENGES (MOOC)		
AN INTRODUCTION TO ARTIFICIAL INTELLIGENCE IN THE COGNITIVE INDUSTRY (MOOC)	INTRODUCTION TILL ARTIFICIELL INTELLIGENS INOM BEHOVSBASERAD (MOOC)	AVANCERAD DIGITALARNING 7,5 HP	AI ETIK FÖR HIGGSLEBER	REINFORCEMENT LEARNING DEL 2, 3 HP	MAGNANALARNING DEL 2, 3 HP	30 MÅJ 2022	30 MÅJ 2022
		28 MÅJ 2022	28 MÅJ 2022	29 MÅJ 2022	30 MÅJ 2022	04 APRIL 2022	04 APRIL 2022
				05 APRIL 2022	06 APRIL 2022	07 APRIL 2022	07 APRIL 2022





**AI COMPETENCE**  
FOR SWEDEN

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[ai-competence.se](http://ai-competence.se)

## Styrgrupp för AI Competence for Sweden

**Claes Strannegård** (Chalmers)

**Fredrika Lagergren Wahlin, Mirosław Staron** (Göteborgs universitet)

**Stefan Byttner** (Högskolan i Halmstad)

**Jan Gulliksen, Niklas Gustafsson, Leif Kari** (Kungliga tekniska högskolan)

**Fredrik Heintz, Micael Frideros** (Linköpings universitet)

**Susanne Norrman, Karl Åström** (Lunds universitet)

**Marcus Liwicki** (Luleå tekniska högskola)

**Stefan Eck** (Mälardalens högskola)

**Helena Lindgren, Anna Mannelqvist** (Umeå universitet)

**Johan Axelsson, Per-Olof Larsson, Amy Loutfi, Camilla Ulvmyr** (Örebro universitet)

**CHALMERS**  
UNIVERSITY OF TECHNOLOGY



GÖTEBORGS  
UNIVERSITET



HÖGSKOLAN  
I HALMSTAD



LULEÅ  
TEKNISKA  
UNIVERSITET



LUNDS UNIVERSITET

li.u LINKÖPINGS  
UNIVERSITET

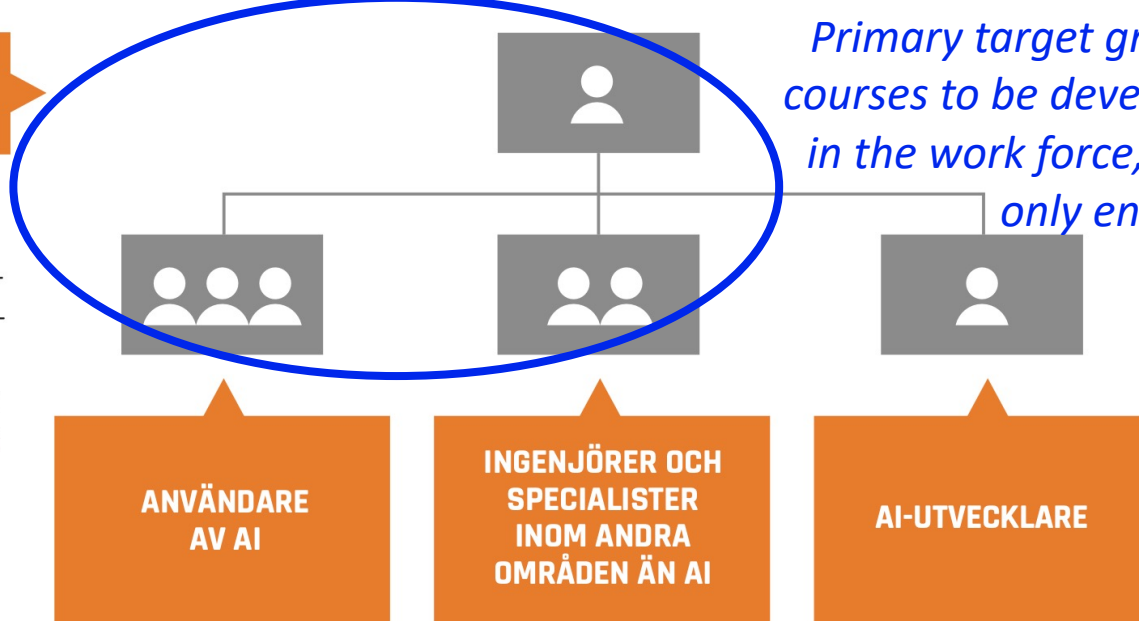


MÄLARDALENS HÖGSKOLA  
ESKILSTUNA VÄSTERÅS

ÖREBRO  
UNIVERSITET

## BESLUTFATTARE

Förstå AIs möjligheter för organisationen. Fatta beslut om AI-initiativ och leda implementering av AI i organisationen. Fatta beslut om inköp av AI-verktyg från specialiserade underleverantörer.



Medarbetare som kommer att använda AI-stöd för att utföra sina arbetsuppgifter.

De behöver höja sin kunskap inom AI för att kunna utveckla och anpassa AI-verktyg för att lösa problem inom den egna kompetensdomänen, samt hur AI-tekniken påverkar utformningen av nya tjänster.

Det här är den djupaste nivån, ofta personer med djup kunskap om datavetenskap och programmering. De arbetar med att utveckla AI-verktyg för organisationen.

*Primary target group for the short courses to be developed were people in the work force, and broadly, not only engineers*



**AI COMPETENCE**  
FOR SWEDEN

# MAJOR CHALLENGE

- Very short-sighted funding:
  - 2018-2019: 2,5 MSEK to UMU for each year, decision in June each year
    - Primarily for developing short courses and platform for collaboration
  - 2020-2021: 637 KSEK to UMU for each year, decision in June 2020
    - Primarily for running the short courses developed 2018-2019
  - UMU did not have the organisation for education for industry like KTH, Chalmers, ÖrU had, and not substantial support from the KK foundation.





# AIMS @ UMU

- i. Investigate needs
- ii. Develop infrastructure around AI-related education, collaboration and research, locally, regionally and nationally
- iii. Initiate the development of new education and continued education (fortbildning)
- iv. Strengthen existing education and courses with new or further developed contents of artificial intelligence



# STRATEGY FOR AI COMPETENCE @ UMU

## Broad effort (across faculties and organisations in society):

- Engage, mobilise and at the same time educate:
  - Researchers and teachers at all faculties at Umeå
  - Industry representatives
  - Representatives from public organisations
  - Cross-faculty work group
- Build upon and use existing networks in society
- Build upon existing initiatives
- Education, collaboration and research "hand in hand"



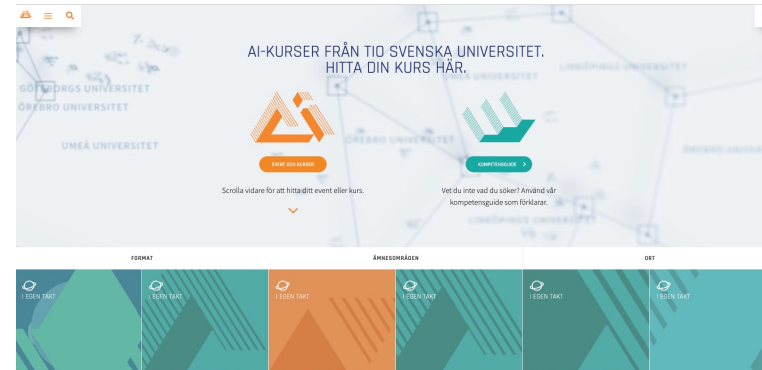
# RESULTS AND EFFECTS

- A broad and increasing engagement in AI research education and collaboration among the university's teachers, researchers and industry representatives
- Development of existing courses by **infusing or further develop AI contents**,
- Development of a **package of new short AI courses** targeting professionals with different backgrounds,
- Shorter education efforts that have reached broadly in society
  - **Study Fridays**, lunch seminars, workshops, **AI Fridays**, --- now including **#FrAIdays**, which reaches also outside of Sweden
- Contributed to the establishment of a **masters program in AI** for students with background in computer science or mathematics – started 2020,
- Developed proposal of a new **interdisciplinary masters program in "applied", or "human-centered AI"** for students with Bachelor degree in other topics,
- Communication and network: **UMUs webb on AI** and the **UmeAI network** (2018 - )
- Plattform for collaboration across research, education and society (**Digital Impact North**), kick-off during an **AI Friday** 21 February 2020.



# RESULTS AND EFFECTS

- Participation in activities that AI Competence for Sweden @ UmU organised, or taken part in organising:
- 2018-2019
  - More than 1.250 participations in activities in the region of Umeå.
  - Seed money to 30 teachers for developing AI contents in existing 26 regular courses 2018-2019.
- 2020-2021
  - In total ca 450 registered, more than 300 participated in activities, also participants from other parts of Norrland.



# PROGRAMME PART 1

## AI Competence for Sweden: Introduction and summary – *Helena Lindgren*

- **Short courses**
  - AI for Industry: Introduction – *Juan Carlos Nieves*
  - AI for Industry: Reasoning and Decision Making – *Juan Carlos Nieves*
  - AI for Industry: Introduction to Machine Learning – *Tommy Löfstedt*
  - ELSEC – Ethical, Legal, Social, Economic and Cultural Issues in AI – *Andreas Theodorou*
  - AI for Health and Healthcare – *Helena Lindgren*
  - AI for Cultural Workers – *Per Holm*
- **Master program in AI** – *Juan Carlos Nieves*
- **Interdisciplinary Master Program in Applied/Human-Centered AI** – *Helena Lindgren*
- **WASP-ED and connection to AI Competence** – *Helena Lindgren*
- **TAIGA and AI Education** – *Frank Dignum*
- **Discussion points for the lunch discussion**
- **Panel discussion**
- **Summary and What's next?**



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AI COMPETENCE  
FOR SWEDEN

# PACKAGE OF SHORT COURSES (CORRESPONDING TO 14+ CREDITS)

BESLUTSFATTARE

ELSEC –  
Ethical,  
Legal,  
Social,  
Economical  
and  
Cultural  
aspects of  
AI

AI for Industry:  
Reasoning and  
Decision Making

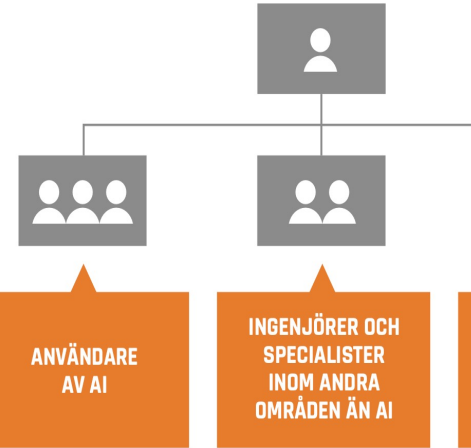
AI for Industry:  
Machine Learning

AI for Industry: Introduction

AI for Cultural  
Workers

Introduction to  
AI for  
Healthcare  
Workers\*

AI for Health and  
Healthcare\*



AI COMPETENCE  
FOR SWEDEN

# **SHORT COURSE 1:**

# **AI FOR INDUSTRY:**

# **INTRODUCTION**

**Juan Carlos Nieves**

**[Juan.carlos.nieves@umu.se](mailto:Juan.carlos.nieves@umu.se)**



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# EXPECTED LEARNING OUTCOMES

Corresponds to 3 ECTs

There are three main expected learning outcomes for the students attending this course:

- Describe concepts, methods, and theories of automated reasoning, decision-making, planning and search, machine learning and multiagent systems.
- Design and evaluate intelligent software agents.
- Discuss the effect on society of emerging AI-based technologies.

No technical skills are expected.





# CONTENTS

- Lecture 1: **Hot topics in AI**
- Lecture 2: **Intelligent agents and common architectures of intelligent agents**
- Lecture 3: **Problem definition, analysis: what problem to be solved**
- Lecture 4: **Decision support, automation**
- Lecture 5: **Machine Learning**
- Lecture 6: **Planning and search**
- Lecture 7: **Autonomy**
- Lecture 8: **Responsible AI**
- Homework on a topic related to their work, students positive and wanted to attend more courses.



**SHORT COURSE 2:**

**AI FOR INDUSTRY: REASONING  
AND DECISION MAKING**

**Juan Carlos Nieves**  
**[Juan.carlos.nieves@umu.se](mailto:Juan.carlos.nieves@umu.se)**



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# EXPECTED LEARNING OUTCOMES

Corresponds to 3 ECTs

There are three main expected learning outcomes for the students attending this course:

- Know basic principles of Answer Set Programming and semantic technology to be able to describe and apply symbolic reasoning methods.
- Use both answer sets and semantic web solvers for modeling and implementing of intelligent systems.
- Be able to judge the suitability of symbolic reasoning methods for a given problem.

Some level of technical skills is expected.



# CONTENTS

Developed partly in collaboration with Örebro University

- Lecture 1: **What is Knowledge Representation and Reasoning?**
  - Lecture 2: **Intro to OWL technology**
  - Lecture 3: **SWRL**
  - Lecture 4: **SPARQL**
  - Lecture 5: **Introduction to Answer Set Programming (ASP)**
  - Lecture 6: **Integration of ASP and Unity**
  - Lecture 7: **Optimization in ASP**
  - Lecture 8: **Stream reasoning in ASP**
  - Lecture 9: **Hybrid architectures (Reasoning and learning)**
- 
- Homework on a topic related to their work, students positive and were able to model relevant problems from their work.





# AI FOR INDUSTRY: INTRODUCTION TO MACHINE LEARNING

- Corresponds to 3 ECTs, four days and own project work
- Content: fundamental terms and methods in machine learning (ML), e.g., classification, regression, deep learning, and methods for evaluating models, problems and ethical issues with ML.
- "Workshops" practical exercises on "real" data, and presentations of own projects on real data.
- Participants were positive, would like to have had more time to practice.



# SHORT COURSE 4:

## AI COMPETENCE: ELSEC COURSE 2022

**Dr. Andreas Theodorou**

✉ [andreas.theodorou@umu.se](mailto:andreas.theodorou@umu.se)

🐦 [@recklesscoding](https://twitter.com/recklesscoding)



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# COURSE MODULES

## Introduction to RAI (LO1)

Establishes the motivation behind the field of AI ethics by using real-world use cases related to algorithmic biases, generation of disinformation, and accountability.

## Responsibility In Design (LO2)

Processes that go around the development, deployment, and usage of a system.  
(e.g. process standards, traceability of decisions, etc)

## Responsibility By Design (LO3)

System behaviour; e.g. checking and mitigating unwanted biases, ensuring transparency, developing fallback.

## Responsibility For Designers (LO4)

The codes of conduct, chain of responsibility, and critical individual decisions that can be made





# LEARNING ACTIVITIES

- Problem-based learning: debates.
- Serious Game: Purpose-made role-playing game, Protostrategos.
- Homework: assessing of own project/use case.



**SHORT COURSE 5:**

**AI FOR HEALTH AND HEALTHCARE:  
INTRODUCTION**

**Helena Lindgren**



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# AI FOR HEALTH AND HEALTHCARE: INTRODUCTION

- Corresponds to 3 ECTs, *postponed due to covid, a version of the course is given as a doctoral course*
- Content:
  - **Improving function, ability and health:**
    - Human-centered AI and AI-based health interventions; Behaviour Change Systems and Persuasive Technology
  - **Changing profession:**
    - Knowledge representation, terminologies and standards; Decision support systems and national guidelines; New professional roles
  - **The citizen's/ the individual's perspective:**
    - Involving stakeholders and users in designing interactive AI systems: Design methods and principles, Co-creation
- "Workshops" practical exercises and presentations of own projects related to own work situation.





# SHORT COURSE ABOUT AI, DIGITALISATION AND GAME

**Target group:** culture workers, artists and actors in the county of Västerbotten

**Collaboration:** AI Competence for Sweden, Humlab and Region Västerbotten, the Culture Unit

Content:

- **What is AI? And how will it have an impact on our daily life and or professions?**
  - Helena Lindgren, professor Computing science UmU, Kalle Grill, Philosophy, UmU, and Carl-Erik Engqvist, Art Director Humlab, UmU
- **Dance, AI and Digital Tools**
  - Coreographer Robin Jonsson and Åsa Unander-Scharin, Coreographer and Professor in Musical Design, Luleå Technical University
- **Music, AI and Digital Tools: The possibilities are endless. But, the possibilities are endless.**
  - Bob L.T. Sturm, Associate Professor of Computer Science, KTH
- **Teater, AI och digitala verktyg**
  - Stefan Stanicic, Director and Curator Bombina Bombast Theatre Company, Dan Andersson, Director and Annelie Horáková Eriksson, Dramaturge and Actor, REVET Scenkonst, Göteborg



# PROGRAMME

## **AI Competence for Sweden:** Introduction and summary – *Helena Lindgren*

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FOR SWEDEN

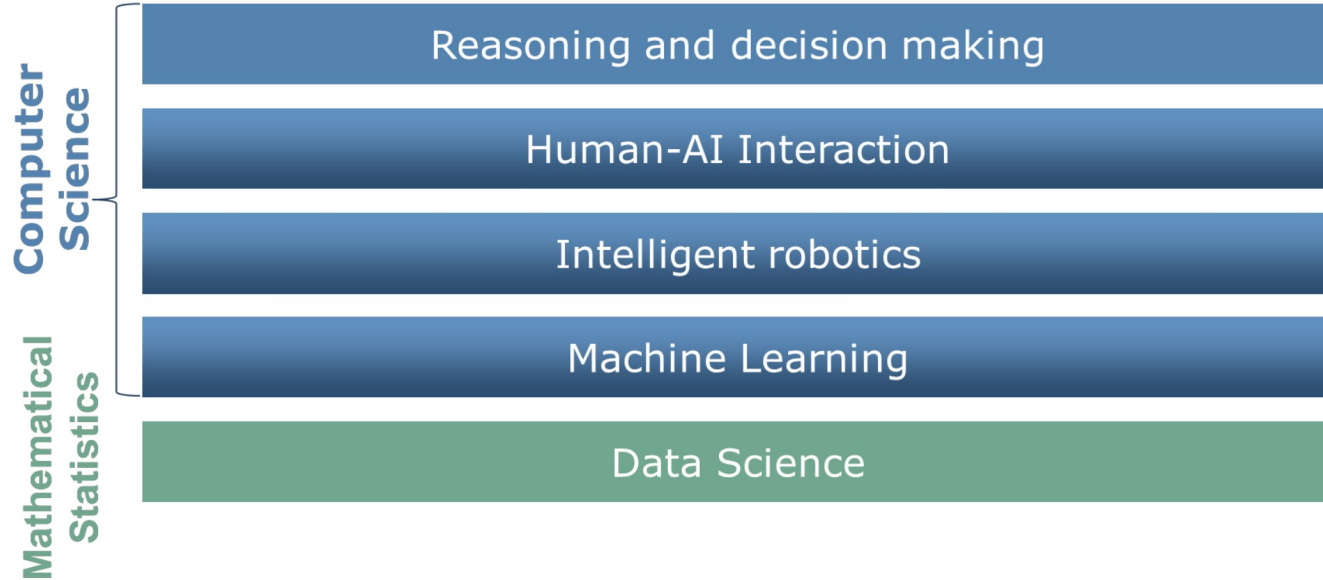
# **MASTER'S PROGRAMME IN ARTIFICIAL INTELLIGENCE (120 CREDITS)**

**Department of Computing Science and  
Department of Mathematics and Mathematical  
Statistics**



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# FIVE PROFILE AREAS





# PROGRAMME OVERVIEW

	Human-AI interaction	Reasoning and decision making	Intelligent Robotics	Machine Learning	Data Science		
Year 1	LP1	Foundations of Logic and Model Theory or Statistics for Engineers					
		Fundamentals of Artificial Intelligence					
	LP2	Interactivity in smart environments				Stochastic processes and simulation	
		Artificial Intelligence - Methods and Applications					
	LP3	Machine Learning					
		Design of interactive, intelligent systems				Data management with Python och R	
	LP4	Trends in interactive intelligent environments		Project course in Computer Vision	Trends in interactive intelligent environments	Design of Experiments and Advanced Statistical Modelling 15 ECTS	
		Human Computer Interaction	Electable	Human Robot Interaction	Electable		
	Year 2	LP1	Cognitive interaction design	Natural Language Processing			Multivariate data analysis
			Electable	Electable	Electable	Electable	Electable
LP2		Project course in AI				Big data och analys av högdimensionella data	
		Electable	Electable	Electable	Electable	Electable	
LP3							
LP4		Master's Thesis work in Computing Science, specialization AI 30 ECTS				Master's Thesis work in Mathematical Statistics 30 ECTS	

# CAREER OPPORTUNITIES

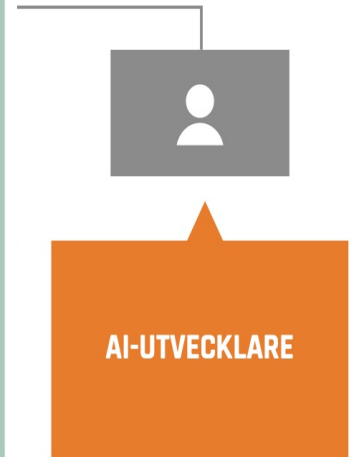
With the broad and core competence in artificial intelligence that the program will give, your future areas of work will mainly **depend on your own interest areas.**

You can work both in **industry** or peruse a **research career**



Examples of job titles:

- AI Architect
- AI Product Manager
- AI Technology Software Engineer
- Data Scientist
- AI Interaction Designer
- AI Ethicist
- Doctoral Student
- Research Engineer



# BEHÖRIGHETSKRAV



En kandidatexamen 180 hp



90 hp i CS, Kognitionsvetenskap, Matematisk eller Matematisk statistik



Av dessa ska minst **30 hp vara inom CS** och inkludera kurser inom programmeringsmetodik och datastrukturer och algoritmer, **samt:**



Minst **22,5 hp i ämnet matematik** inkluderande kurser inom **analys, linjär algebra** och en kurs i antingen **logik eller statistik**



# PACKAGE OF AI COURSES AT MASTER'S LEVEL (45+ CREDITS)



Responsible  
Design of AI  
Systems

(ELSEC - Ethical,  
Legal, Social,  
Economical and  
Cultural aspects of  
AI)

AI - Methods and  
Applications

Machine Learning

Fundamentals of AI

Methodology  
- Logics,  
statistics

Stochastic  
methods and  
simulations\*

Interactivity in Smart  
Environments  
(Human-AI  
Collaboration)



AI-UTVECKLARE



AI COMPETENCE  
FOR SWEDEN

**MASTER'S PROGRAMME IN  
MULTIDISCIPLINARY (HUMAN-CENTERED)  
ARTIFICIAL INTELLIGENCE  
(120 CREDITS)**

**Under discussion**



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# PURPOSE AND MOTIVATIONS

- Provide an advanced level education for people with a Bachelor in a subject that *is not* in the computational domains (other than e.g., computer science, mathematics).
  - Fortbildning: providing specialised knowledge in developing AI systems for particular fields, such as pedagogy, nursing, cognitive science, occupational therapy, etc.
  - A 1-year Magister education would fit the CSN funding scheme the government will launch from 2023.
  - Strong interest in society, at EU level at least since 4-5 years.
  - Currently there is no such master programme in Sweden, but GU is developing one planned to be launched 2023.
- The organisation of studies is proposed to follow the same format as the AI Master programme: a core set of AI courses tailored to the student group complemented with specialised courses on AI within the subject that the student is examined.
- *Prerequisites to be discussed* – for the programme at GU and in other places one or two courses in programming are a requirement, in addition to a course in HCI or similar.



# EXAMPLE OF A PACKAGE OF COURSES ON INTERDISCIPLINARY, HUMAN-CENTERED AI ON MASTER'S LEVEL (AI CORE OF 30 CREDITS)

BESLUTSFATTARE

Responsible  
Design of AI  
Systems

(Human-AI  
Collaboration and  
Trustworthy AI -  
ELSEC)

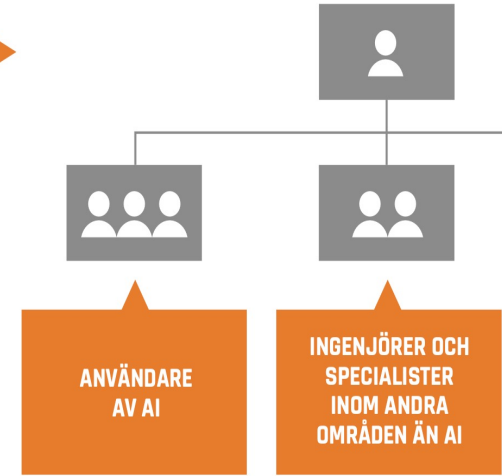
Topic-Specific  
Specialisation: e.g.,  
humanistic or health  
perspectives

Topic-Specific  
Specialisation: e.g.,  
societal or sustainability  
perspectives

Fundamentals of AI

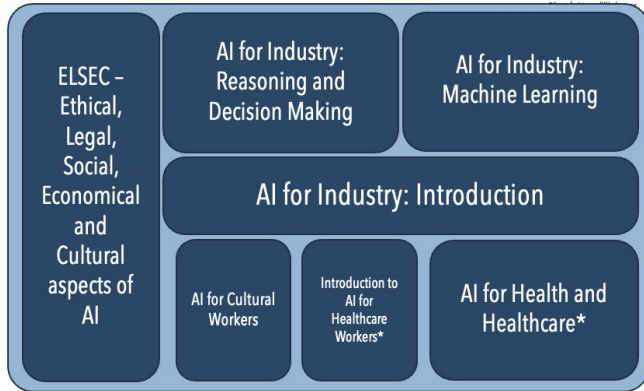
Interdisciplinary  
Research  
Methodology in AI

Human-AI Interaction  
and Collaboration



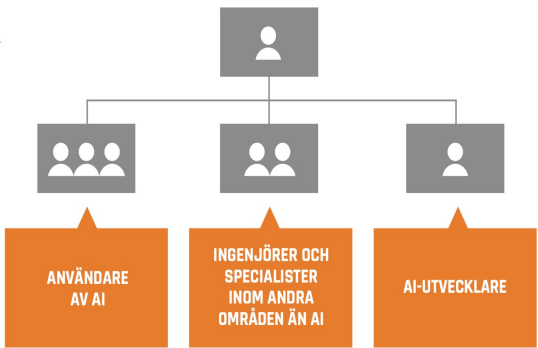
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## Short courses: no formal prerequisites, correspond to 14+ ECTS

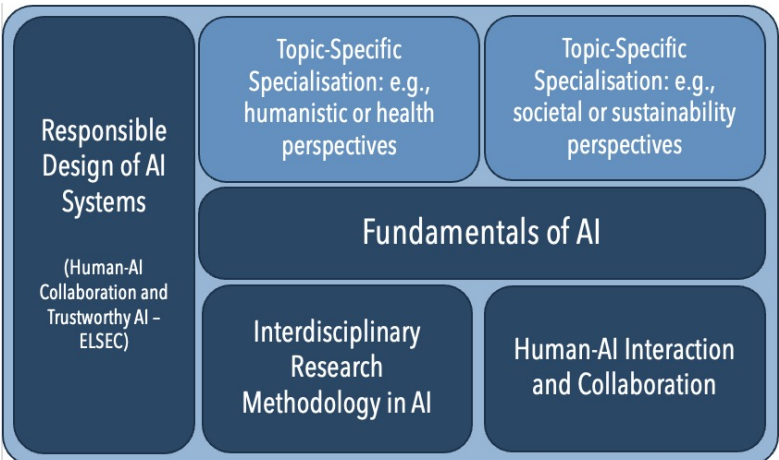


**BESLUTFATTARE**

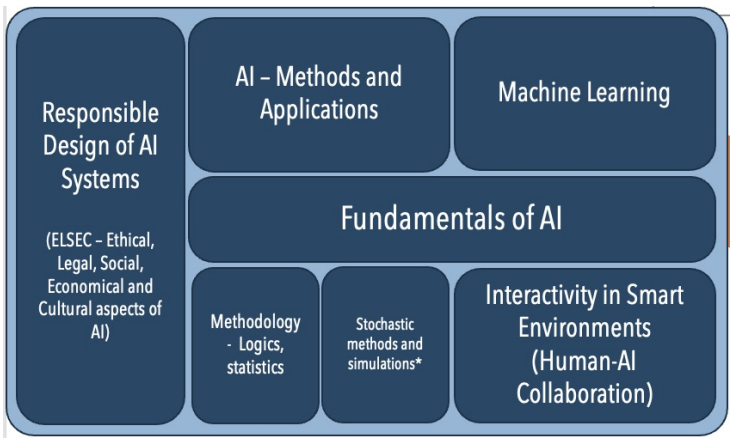
Förstå AIs möjligheter för organisationen. Fatta beslut om AI-initiativ och leda implementering av AI i organisationen. Fatta beslut om inköp av AI-verktyg från specialiserade underleverantörer.



## New master's program in human-centered/ interdisciplinary AI: Example of a core package on AI, 30+ ECTS (to be developed)



## Master's program in AI launched 2020: Advanced level, 45+ ECTS







# INVENTORY 2018

- A questionnaire was sent out to all faculties, departments and individuals to explore current active teachers in AI and AI-related areas and those expected to become engaged in the future.
- 85 responded (37 TekNat; 7 HumFak; 21 MedFak; 20 SamFak)

FAKULTET	TEKNAT	HUMFAK	MEDFAK	SAMFAK	TOTALT
UNDERVISAR INOM AI IDAG	18	1	1	8	28
AVSER FRAMGENT UNDERVISA INOM AI	29	1	12	15	57
VARAV NYA KURSER	13	N/A	6	6	25

FAKULTET	TEKNAT	HUMFAK	MEDFAK	SAMFAK	TOTALT
FORSKAR INOM AI IDAG	27	0	8	9	44
AVSER FRAMGENT FORSKA INOM AI	36	1	17	15	69



# Sign up as a member to UmeAI Network

The UmeAI Network aims to promote collaborations across disciplines and organisations to further advance knowledge, research and innovation related to AI. Here you can sign up for the email list, and tell us what areas you are most engaged in.

<b>Total number of people listed in the UmeAI email lists</b>	<b>145</b>
<b>Total number of people in the UmeAI inventory</b>	<b>112</b>
Number of people employed at UMU	76
Number of people outside of UMU	36

<b>UmU Researchers and teachers listed on umu AI Web page</b>	<b>101</b>
Humfak	7
Medfak	20
Samfak	19
Teknat	55
Research projects relating to AI listed on umu AI web page	40

## AI forskare

Nära 100 forskare och lärare vid Umeå universitet är engagerade i områden relaterade till AI.

## Vad är artificiell intelligens?

Vad är AI och hur påverkar den redan idag våra liv?



På denna sida

[AI Forskning](#)

Utbildning och Nätverk inom AI

Kalendarium AI-seminarium

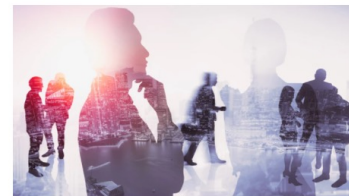
## Utbildning och Nätverk inom AI

Vill du veta mer om AI vid Umeå universitet? Vi erbjuder utbildningar inom området och samverkar i flera nätverk.



### AI utbildning

Umeå universitet erbjuder bred utbildning inom artificiell intelligens.



### AI-nätverk

Samarbeten i olika former är mycket viktigt för utveckling av AI.



### Rådet för AI och autonoma system, RAI

Arbetar för att stärka och utveckla forskning och utbildning inom AI vid Umeå universitet.



### Medicinska fakultetens råd för AI och autonoma system, MAI

Rådet har i uppdrag att synliggöra och samordna AI-forskning vid Medicinska fakulteten.

## Senaste nytt om AI vid Umeå universitet



# Sign up as a member to UmeAI Network

The UmeAI Network aims to promote collaborations across disciplines and organisations to further advance knowledge, research and innovation related to AI. Here you can sign up for the email list, and tell us what areas you are most engaged in.

Areas of expertise among UMU people	76
Machine Learning	24
Knowledge representation, reasoning and decision making	23
Social, ethical and responsible AI	18
Data Science	18
Human-AI interaction/collaboration	17
Natural Language Processing	12
Intelligent robotics	11
Multiagent systems	10
Computer vision	10

**Other not listed above:** cognitive science, Scheduling and planning, Medicine, Medical Imaging, Ethics of risk, The functioning of markets (industrial organization, micro economics, digital markets), Machine Behavior, social simulation, Physics-based simulation for training and testing of AI for control, Sustainable environment, Socio-Technical Systems, Deep Learning, Reinforcement Learning, Computer Architectures for Machine Learning, Anomaly detection, Security and privacy aware machine learning, System identification, Control theory, Network inference, Systems biology, Physics of AI, Intelligent embedded systems, Distributed systems, Remote sensing, image processing, behavioural biology, Machine cognition and machine consciousness (actual or possible), Optimization, Computational biology, data-efficient machine learning and optimization

AI application areas of interest among UMU people	76
Automation	40
Medicine and health	34
Ethical aspects of AI	27
Sustainable society	23
Industry 4.0, 5.0	21
Sustainable environment	20
Life Science and biomedicine	19
Education	18
Culture, entertainment and social media	15
Safety, data forensics and law	13
Democracy, government and selfdetermination	13
Economic growth and wealth	10

**Other not listed above:** Smart Environments (from mobile devices to smart cities), Medical Imaging, How AI influence markets and specifically digital marketing (managerial economics) and also public procurement and AI, High-Performance Computing, Computer Music, Media analysis, policy making, Multiagent systems, Socio-Technical Systems, Embedded systems, Internet of Things, Smart Environments, Intelligent environments, Machine Learning for software developers point of view, Physics and AI, Medical Imaging, Spatial modelling, Ethical aspects of AI, multimodal time series data analysis, Socio-technical systems; Power and politics, Machine cognition and machine consciousness (actual or possible)

**SEED FUNDING FOR DEVELOPMENT OF AI  
CONTENTS  
26 EXISTING COURSES 2018-2019**



UMEÅ UNIVERSITY

# SEED FUNDING TO 26 EXISTING COURSES 2018-2019

**Tabell 5: Kursinnehåll på de kurser som fick medel från AI Competence for Sweden (ämnesområden utifrån AI Competence for Swedens klassifikation)**

Kursinnehåll	Antal 2018 (totalt 15)	Antal 2019 (totalt 11)
Knowledge representation and reasoning	5	3
Machine learning	8	7
Planning and scheduling	4	2
Computer vision	2	3
Natural language processing	1	0
Intelligent agents and multiagent systems	4	1
Human-AI interaction	3	0
Robotics	4	1
Practical applications of AI	7	4
Humans and AI (societal, economic, legal, ethical aspects on AI)	4	2
Data science	5	4
Computer science	4	2
Mathematics and statistics	7	6
Other*	3	4

- From AI Competence report 2018-2019
  - 2018: 15 courses (14 teknat, 1 medfak)
  - 2019: 11 courses (4 teknat, 6 samfak, 1 medfak)

\*Other (comments from applicants, one did not mark any of the pre-defined topics):

- Physics
- Theory of Mind and philosophical foundations of AI
- General project course with machine learning components (Design-build-test: no other topic)
- Business education
- Organizational change, Information systems
- vision as probabilistic inference - in humans and machines
- Medical image analysis

# SEED FUNDING TO 26 EXISTING COURSES 2018-2019

**Tabell 6: Förbättringar fördefinierade utifrån målsättningar med AI Competence for Sweden**

<i>Fördefinierade kategorier av förbättringar</i>	<i>Antal i utvärdering 2018 (15 svar)</i>	<i>Antal i utvärdering 2019 (11 svar)</i>	<i><b>Totalt 2018-2019 (26 svar)</b></i>
Developed AI lectures and lab assignments to be accessible on distance (may be included in the AI Sweden Portal)	5	2	<b>7</b>
Developed modules of the course that can be part of public presentations (to be presented at “Study Fridays” and potentially recorded)	6	0	<b>6</b>
Included or further developed hands-on lab exercises on AI (AI training)	8	6	<b>14</b>
Made lectures and other material accessible for sharing between universities	2	1	<b>3</b>
Developed multi-disciplinary perspectives on AI	6	5	<b>11</b>
Developed collaboration with industry, public organizations or other stakeholders in AI as part of the course	3	1	<b>4</b>
Improved AI content of a course to better fit packages/tracks of related AI-courses	4	3	<b>7</b>
Other**	3	5	<b>8</b>

- From AI Competence report 2018-2019
  - 2018: 15 courses (14 teknat, 1 medfak)
  - 2019: 11 courses (4 teknat, 6 samfak, 1 medfak)

\*\*Other (comments from applicants, three of the eight applicants did not mark any of the pre-defined purposes of the developments):

- Overall made more explicit and strengthened aspects of fundamental (philosophical) issues of AI in relation to theory of mind, symbol grounding, embodiment, etc.
- Introduction into how we can implement AI not only in this course but also in future courses to improve the syllabus. discussions of the topics and how to implement more AI into the course, not only now but more how to improve in general
- Improved AI content of a course to fill an existing knowledge gap
- Incorporated new readings in the use of AI for business and developed a workshop.
- New lectures and hands-on exercise / demonstration
- Developed a project relating AI and Stochastic Differential Equations (*nothing else of the above, topic: mathematics and statistics*)
- Planning for new course. (Which content (Methods?, Ethics?, Applications? Motivating examples?) ? Which literature? Which program language / software? Time of the year - when does it fit in different programs?) (*nothing else of the above, new course*)
- Developed combined lectures and seminars, and workshops on AI and machine learning (*nothing else of the above, revised course now on AI in future society*)

# UMEÅ UNIVERSITY'S AI EDUCATION IN REPORT BY LUND UNIVERSITY

Overview of regular courses developed  
the past 4 years



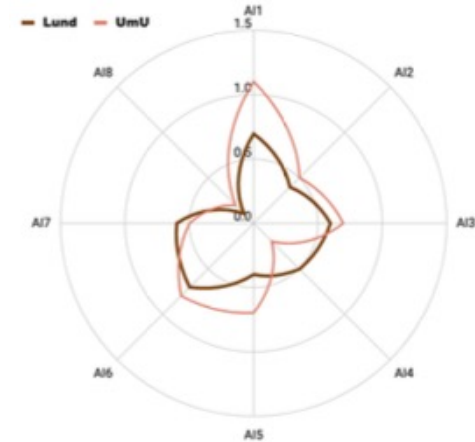
UMEÅ UNIVERSITET



# SUMMARY OF LUND UNIVERSITY'S INVESTIGATION/INVENTORY OF AI COURSES AT UNIVERSITIES IN SWEDEN, FINLAND COMPARED TO STANFORD

- They found 15 AI courses at Umu based on their criteria (LU has the most, 50-60):
  1. Theory foundation\*\* (UMU third place after KTH, Chalmers)
  2. Techniques/methods\*
  3. Solution complexes\*
  4. Applied (sciences)
  5. **Applied (end-user)\*\* (UMU strongest also when including Stanford, Aalto, Helsinki)**
  6. **Impact on society\*\* (UMU strongest)**
  7. **Governing AI (UMU second strongest after LU)**
  8. **AI perceptions** – philosophy, concerns, alternative perspectives, etc. (UMU **almost NONE but strongest**)
- Umu has a bit more courses in Bachelor level than the other universities (40%)

Average of coded values for each category



For each category:  
Strong = 3; Medium = 2; Some = 1; None = 0.



# AI-COURSES AT UMU *(not a complete list)*

## BLUE ARE NEW COURSES FROM 2018

"L" ARE COURSES LISTED IN LU:S REPORT

**\*** , **\*\*** ARE COURSES FOR STUDENTS IN DIFFERENT PROGRAMS ACROSS DEPARTMENTS, **\*\*\*** ACROSS FACULTIES

### Samfak

1. [Artificiell intelligens i samhället, 7,5 hp \(bachelor, 2020\) L](#)
2. [Artificiell intelligens framtidens samhälle, 7,5 hp \(bachelor, 2020\)](#)
3. [Artificiell intelligens för verksamhetsutveckling, 15 hp \(master, 2021\) L](#)
4. [Interaktionsdesign för framväxande teknologier, 7,5 hp \(master, 2022\)](#)
5. [Statistik, 7,5 hp \(bachelor\) L](#)

### Humfak

5. [Artificiell intelligens i upplevelsesamhället, 7,5 hp \(bachelor, 2019\)](#)
6. [Beslutsteori och artificiell intelligens, 7,5 hp \(bachelor, 2022\)](#)
7. [Den artificiella intelligensens filosofi: Teoretiska grunder, 7,5 hp \(bachelor, 2021\)](#)
8. [Den artificiella intelligensens filosofi: Etik och policy, 7,5 hp \(master, 2021\) L](#)
9. [Digital källkritik, 7,5 hp \(master, 2020\) L](#)

### Medfak

10. [Djupa faltningsnät med tillämpningar i medicinsk bildanalys, 7,5 hp \(master, 2019\) L](#)

### Teknat

11. [Deep learning - metoder och tillämpningar, 7,5 hp \(bachelor, 2018\) L](#)
12. [System och algoritmer för intelligenta fordon, 7,5 hp \(master, 2020\)\\*\\* L](#)
13. [Matematisk introduktion till maskininläring, 7,5 hp \(bachelor, 2022\)](#)
14. [Design, Build, Test, 15 hp \(master\)\\*](#)
15. [Artificiell intelligens för kognitionsvetare, 7,5 hp \(bachelor\)\\*\\*\\*](#)
16. [Artificiell intelligens – grunderna, 7,5 hp \(bachelor\)\\*\\* L](#)
17. [Artificiell intelligens – metoder och tillämpningar, 7,5 hp \(master\)\\*\\* L](#)
18. [Interaktiva, intelligenta miljöer, 7,5 hp \(master\)\\*\\*\\* L](#)
19. [Design av interaktiva AI-system, 7,5 hp \(master\)\\*\\* L](#)
20. [Trender inom interaktiva intelligenta miljöer, 7,5 hp \(master\)\\*\\* L](#)
21. [Maskininläring, 7,5 hp \(master\)\\*\\* L](#)
22. [Maskininläring, del 2, 7,5 hp \(master, 2022\)\\*\\* L](#)
23. [Människa-robotinteraktion, 7,5 HP \(master\)\\*\\*](#)
24. [Språkteknologi, 7,5 hp \(master, 2021\)\\*\\*](#)
25. [Teoretiska perspektiv inom kognitionsvetenskap, 7,5 hp \(master\)\\*\\*\\*](#)





# WASP-ED

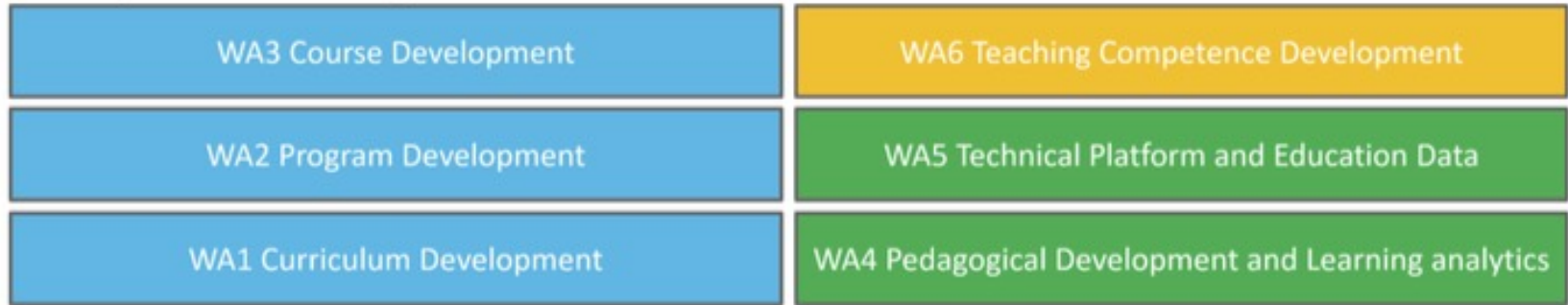
- Newly started program funded by MMW
- Application by WASP and WASP-HS
- 18.5 MSEK, 2 years
- Program office at LiU
- Collaboration between the universities

## WASP-ED: Objectives

- 1. Provide the educational foundations** for AI and related transformative technologies.
- 2. Scale-up the national educational capacity** in AI and transformative technologies including educating and maturing the teaching staff to make use of and be innovative in the application of AI and transformative technologies in education.
- 3. Scale-out education** in AI and transformative technologies **to disciplines and professions beyond the technical core.**
4. Develop **data-based education and pedagogical transformation** using learning analytics.



# WASP-ED ORGANISATION



*Figure 1. The six WASP-ED work areas (WAs)*

## WASP-ED: WA Leaders

- Leader WA1 (Curriculum): **Helena Lindgren, UmU**; co-lead Fredrik Heintz, LiU
- Leader WA2 (Program): **Amy Loutfi, ÖrU**; co-lead Alan Said, GU
- Leader WA3 (Course): **Mikael Sundström, LU**; co-lead Anna Foka, UU
- Leader WA4 (Pedagogy): **Teresa Cerrato-Pargman, SU**, co-lead Olga Viberg, KTH
- Leader WA5 (Platform): **Jan Gulliksen, KTH**; co-lead Joakim Lilliesköld, KTH
- Leader WA6 (Competence): **Thomas Hillman, GU**; co-lead Kristin Ewins, ÖrU

# WASP-ED

1. Development of an AI Curriculum
  1. Intended to be broader than what is fitting a standard education program (WASP+WASP-HS)
2. Program Development
  1. Master's program for students with other background than computer science/mathematics, 1-year magister as "continued education" (fortbildning)
3. Course Development
  1. Inventory of courses at the different universities, identify what is missing
4. Pedagogical development, learning analytics
5. Technical platform and educational data
6. Teaching competence development (UPL:s)



# WASP-ED SAVE THE DATE: 20 APRIL

- 10-12: Open online information meeting, and discussion groups on the six work areas, more information can be found here:
- <https://wasp-hs.org/events/wasp-ed-open-information-meeting/>
- To receive information about WASP-ED, please sign up here:  
<https://forms.office.com/r/6AEGUsxE1>



# TAIGA AND AI EDUCATION

**Frank Dignum**



UMEÅ UNIVERSITY



# DISCUSSION POINTS FOR LUNCH

- What are the new education needs due to the infusion of AI in society?
- What developments should we do within the basic education programmes to meet the needs and changes in society?
- How may the current topics and disciplines we educate students in, develop/change due to the development of AI?
- How would an interdisciplinary magister/master level program be designed to meet the societal needs?



# PANEL DISCUSSION



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# VERY BRIEF SUMMARY OF THE PANEL DISCUSSION

- Teaching AI
  - Challenge to engage more teachers in integrating AI into education: time limits
  - Infusing AI in existing courses or having separate AI courses?
- Teachers learning about AI
  - Teachers need continued education, bridge the divide between those who know and those who feel that they do not know.
- Need of embedding AI in basic education
  - AI is everywhere, teach about potentials.
  - Ethical perspectives, how to use AI.
  - Skills and ability to analyse effects of technology use including AI, better to include at the forefront of development rather than later.
  - Human-AI relationships, language and AI, cultures and AI.
  - Some professions are changing, using AI changes for instance the relationships among professionals and patients in healthcare, should affect education.
- Disciplinary vs. interdisciplinary
  - One comment: When educating students within particular disciplines in which students will become authorised to practice, AI is best infused in the basic education. At advanced level, interdisciplinarity is natural and required.
- Critical perspectives on AI
  - How to balance with other needs for developing education?
  - How much is the need for AI in education a push by society and how much is this an actual need among professionals in society?



# SUMMARY AND WHAT'S NEXT?



UMEÅ UNIVERSITY

# SOME TAKE-AWAYS FROM TODAY

- Development of AI education across programmes and courses at UmU is increasing (*15+ new courses past four years across the faculties*), but can/needs to be further boosted/supported.
- Main barrier for teachers is lack of time.
- Teachers at UmU need competence development in AI.
- UmU:s research and education on “non-traditional” AI topics makes UmU stand out in a national evaluation (*applied end-user perspective, impact on society, governing AI and “AI perceptions”*).
- TAIGA will continue AI Competence’s effort to engage teachers and researchers broadly across the faculty in the development of AI education at UmU.
- The concept of Study Friday / AI Friday continues, currently #FrAlDay is running: <https://www.umu.se/forskning/var-forskning/fordjupa-dig/artificiell-intelligens/friday/>
- The National network AI Competence for Sweden continues, and the AI Competence Portal for announcing courses.
- How the short courses targeted at other than regular students developed as part of AI Competence can be accessed by industry/society from now will be investigated (CS, Digital Impact North, Humlab).
- The development of an interdisciplinary master’s programme initiated by AI Competence for Sweden at UmU will continue in collaboration across interested departments, and potentially, in collaboration with WASP-ED.
- WASP-ED will engage teachers across universities for collaborations on developing an AI Curriculum, AI Master programs, AI courses, technical platforms, pedagogy related to AI, and AI competence among teachers.





# SUMMARY OF AI COMPETENCE ACTIVITIES

- **2018 (AI Fridays):**
  - Workshops:
    - **1<sup>st</sup> Workshop on AI@UmU**, welcome by Vice Chancellor Hans Adolfsson
      - 17 departments represented in the list of speakers
    - **2<sup>nd</sup> Workshop on AI@UmU and Society**
      - Directed this time also to societal organisations
      - Talks by among other Marie Gidlund on Umeå Municipality's industry agenda, Tieto, Humlab Talks AI, AI in Ice Lab, inspiration talks by Elisa Giacardi, Industrial Design and Frank Dignum, UmU.
  - Panel discussions (moderated by PhD students):
    - **Panel discussion on the Societal Impact of Artificial Intelligence**
      - *Franziska Klügl, Professor at Örebro University*
      - *Cesar A. Tacla, Professor at the Federal University of Technology of Paraná (Brazil)*
      - *Virginia Dignum, Professor at Umeå University*
      - *Helena Lindgren, Associate Professor at Umeå University*
    - **Panel discussion on AI & Social Media: a Threat to Democracy? (Part of Study Friday II)**
      - *Viktor Hariz, Journalist, Sveriges Radio*
      - *Johanna Björklund, CTO of CodeMill (among other roles)*
      - *Kai-Florian Richter, Associate Professor, Department of Computing Science, Umeå University*
      - *Christopher Blöcker, IceLab, Umeå University*
  - **Study Fridays: Vad är AI och vad ska vi ha den till? Part I-III.** Glimpses from AI courses, demonstrators, test to use AI
  - Tutorial on Software Engineering for Multi-Agent Systems (Prof. Cesar A. Tacla, Brazil)
  - **Senioruniversitetet: Vad är AI och vad ska vi ha den till? Part I-III.**



# SUMMARY OF AI COMPETENCE ACTIVITIES

- **2019:**
  - Workshops on AI (**AI Fridays**):
    - 3<sup>rd</sup> Workshop on AI@UmU: **Humanities and AI: *Is there a Human in our AI Future?***
    - 4<sup>th</sup> Workshop on AI@UmU: **A Medical and Health Perspective on AI**
    - 5<sup>th</sup> Workshop on AI@UmU: **A Social Science Perspective on AI**
    - 6<sup>th</sup> Workshop on AI@UmU: **AI Friday goes Thursday – AI Efforts beneficial to Industry and Society?**
      - *Massive Effort on AI research and Education, but what's in it for industry and society?*
  - **Between hype and hysteria: AI and the Humanities** (conference @ Humlab)
  - **Workshop focussed on AI Education** to prepare for applying for seed funding
  - Seminars on AI hosted in MIT Place and the seminar room:
    - Engineering Multi-Agent Systems – The Road Ahead (Timotheus Kampik, UmU)
    - Deep Learning as a Service for IoT Systems (Prof. Tarek Abdelzaher, US)
    - Green IoT and Data Analytics for Smart Cities (Edith Ngai, UU)
    - The design of Human Oversight for Autonomous Weapon Systems (Ilse Verdiesen from TU Delft / Royal Netherlands Armed Forces)





# SUMMARY OF AI COMPETENCE ACTIVITIES

- **2020-2021:**
  - February 2020: **7<sup>th</sup> Workshop on AI@UmU: AI Friday – Digital Impact North Kick-Off**
    - UmU, Umeå Municipality, Region Västerbotten, SLU, RISE, Industry
  - **AI@LUNCH** - *Välkommen att delta i digitala lunchseminarier med diskussioner kring hur AI påverkar vår vardag! Tema för fyra lunchseminarier som hålls under hösten 2020 är hur yrkesroller förändras när AI-baserade system integreras.*
    - 29 september kl 12.10-12.50: Vad är framtidens nya yrkesroller i en tillvaro med AI-baserade system?
    - 20 oktober kl 12.10-12.50: Vad händer med hälso- och sjukvårdens professioner när beslutsstödsystem och självträningsapplikationer blir vardag?
    - 10 november kl 12.10-12.50: Vad händer när AI-baserade system kan hjälpa barn att lära sig saker i skolan?
    - 1 December kl 12.10-12.50: Hur förändras kulturarbetares yrkesroller?
  - Maj 2021: **AI i vår digitala kultur** – fortbildningsarrangemang för Umeå kommuns anställda



*Glimpses from announcements*



UMEÅ UNIVERSITY

## Sept 28, 2018: Expert panel on the Societal Impact of Artificial Intelligence

We are pleased to invite everybody interested to an expert panel on the *Societal Impact of Artificial Intelligence* on Friday, **September 28th, 11:30-13:00**, in the foyer (MIT place) of **MIT-Huset**, Umeå University. The panel is part of the *AI Sweden* education initiative.

The panelists will be:

- Franziska Klügl, Professor at Örebro University
- Cesar A. Tacla, Professor at the Federal University of Technology of Paraná (Brazil)
- Virginia Dignum, Professor at Umeå University
- Helena Lindgren, Associate Professor at Umeå University

Feel free to spread the word.

We are looking forward to seeing you there!

## Sept 26, 2018: Tutorial on Software Engineering for Multi-Agent Systems

Tutorial by **Prof. Cesar A. Tacla**

Depto. Acadêmico de Informática (DAINF)

Universidade Tecnológica Federal do Paraná (UTFPR/Curitiba), Brazil.

**Title:** Goal Processing – A practical approach using AgentSpeak/JASON

**Date:** Sep 26.

**Time:** 9.00 – 12.00, it includes a coffee break from 10.00 to 10.30.

**Place:** Seminar Room by the MIT Place MIT-huset

### ABSTRACT:

The aim of this short-tutorial is to introduce topics related to goal processing in one of the many existing languages for agent-oriented programming (JASON). In the first part, we briefly present concepts related to BDI agents capable of performing practical reasoning: goal types, types of commitment to intentions, and conflicting goals. In the second part, we present how such concepts are implemented in JASON by programming, customizing or extending JASON. Finally, we discuss some limitations of agent-programming languages when faced to the various elements we expect the agents represent and reason about.

## Nov 30, 2018: Study Friday

### Do you want to know more about AI? Vill du veta mer om AI?

Welcome to Study Friday **Fredag, 30 November, 10.00-14.00** i **MIT-huset!** Register using [this link](#). The Study Fridays are part of the *AI Competence for Sweden* initiative.

### Preliminary Program

#### MIT-Place:

10.00-10.30 Coffee and information about ongoing efforts on AI

10.30-11.45 What is AI and what can we use it for? Part II: "AI for broadcasting" (Johanna Björklund)

12.00-13.00 Lunch and panel discussion on a societal issue: AI in social media – a threat to democracy?

The following persons will join the panel:

- Viktor Hariz, Journalist, Sveriges Radio
- Johanna Björklund, CTO of CodeMill (among other roles)
- Kai-Florian Richter, Associate Professor, Department of Computing Science, Umeå University
- Christopher Blöcker, IceLab, Umeå University

13.15-14.00 Glimpse from an AI-course: "Artificial and human cognitive agents" (Kai-Florian Richter)

#### Seminar Room:

Demonstrations and opportunity to test interactive AI technology built in research and education: Augmented Reality, robots, decision support systems

Welcome!

## Nov 23, 2018: Study Friday

### Do you want to know more about AI?

Welcome to the first Study Friday **Friday, November 23, 10.00-14.00** in the **MIT Building!** Register using [this link](#). The Study Fridays are part of the *AI Competence for Sweden* initiative.

### Preliminary Program

#### Seminar Room:

10.00-10.30 Coffee and information

10.30-11.45 What is AI and what can we use it for? Part I (Juan Carlos Nieves)

12.00-13.00 LUNCH

13.15-14.00 Glimpse from an AI-course: Intelligent Agents, Creative People and Agent Societies (Helena Lindgren)

Demonstrations and opportunity to test interactive AI technology built in research and education: Augmented Reality, robots, decision support systems

Welcome!

## Dec 7, 2018: Study Friday

### Do you want to know more about AI? Vill du veta mer om AI?

Välkommen till Study Friday **Fredag, 7 December, 10.00-14.00** i **MIT-huset!** Registrera dig [här](#).

### Preliminärt Program

#### MIT-Place:

10.00-10.15 Kaffe och information

10.15-11.15 Glimtar från en AI-kurs: Introduktion till Deep Learning (Kalle Prorok)

11.15-12.00 Vad är AI och vad ska vi ha den till? Del III: AI för bättre hälsa – AI som expert, coach, och kanske till och med som vän? (Helena Lindgren)

12.00-13.00 LUNCH

13.15-14.00 Glimtar från en AI-kurs: Kreditrisk – förutsäga återbetalningsförmåga av lån med hjälp av AI (Marcus Ådahl)

#### Seminarierummet:

Demonstrations and opportunity to test interactive AI technology built in research and education: Augmented Reality, robots, decision support systems

#### MA316:

Testa programmera Deep Learning

Välkommen!



UMEÅ UNIVERSITY

# 2018

# 2018

Welcome to the first workshop on AI@UmU. The workshop is organized as part of the "AI Competence for Sweden" initiative.

The workshop will be held on **Wednesday, October 17th, 8.30-19.00, at MIT-Place in the MIT Building.**

The workshop is for you who:

- want to join in forming tomorrow's AI at Umeå university,
- want to know more about ongoing national and international AI initiatives that Umeå University is part of,
- want to meet and learn what is ongoing in the field of artificial intelligence at Umeå University,
- want to participate in initiating a cross-faculty discussion on how research and education on AI foundations, their applications and integration into society can be further expanded at Umeå University through cross-disciplinary collaborations.

The day will contain presentations, inspiration talks and round table discussions. We invite researchers and teachers employed at Umeå University to give a brief presentation of the following:

- What AI or AI-related research are you/your group/your department pursuing, and/or what AI-related courses do you/your group/your department give
- What are the main research problems?
- What is lacking at Umeå University to advance the field?
- What specific educational effort(s) relating to AI do you find most urgent?

The questions are intentionally broad in order to collect a broad range of aspects as a first inventory. In order to provide space for as many presenters as possible the time for presentation is limited to a maximum **6 minutes** for the presentation and a maximum **5-6 slides**. The first slide should be a title slide including your name and affiliation. The presentations should be in English, and will be recorded.

**Sign up no later than October 9.** Use [this link](#) to sign up.

When signing up, specify whether you would like to give a presentation. You will receive a notification after October 9 whether you will be able to present, since the number of slots are limited.

Presentations should be sent to [Kai-Florian Richter](#) by **October 13** at the latest.

For questions contact [Kai-Florian Richter](#).



UMEÅ UNIVERSITY

## Program

8.30-9.00 Registration and coffee

9.00-9.30 Welcome by Vice Chancellor Hans Adolffson, and information about the AI initiatives AI Sweden, WASP and CLAIRE

9.30-10.30 Session 1: Presentations  
Heather Wiltse, Umeå Institute of Design  
Kai-Florian Richter, Computing Science  
Esteban Guerrero, Computing Science  
Karin Danielsson, Informatics  
Henrik Björklund, Computing Science  
Markus Naarttijärvi, Law  
Eva Svedmark, Informatics/UPL  
Xavier de Luna, Statistics/USBE  
Johan Burström, ITS  
Kalle Prorok, TFE

10.30-11.00 Coffee

11.00-12.00 Session 2: Presentations  
Helena Lindgren, Computing Science  
Rickard Sjögren, Chemistry  
Kenneth Bodin, UMIT  
Lili Jiang, Computing Science  
Martin Servin, Physics  
Rolf Hugoson, Political Science  
Juan Carlos Nieves, Computing Science  
Christer Grönlund, Radiation Sciences  
Johanna Björklund, Computing Science  
Zonghua Gu, TFE

12.00-13.00 Mingle lunch

13.00-13.45 Inspiration talk by Virginia Dignum: The hype and promises of AI - towards Responsible Artificial Intelligence

13.45-14.30 Roundtable discussions Round 1

14.30 Coffee

14.45-15.30 Roundtable discussions Round 2

15.30-16.30 Session 3: Presentations  
Karin Danielsson, Informatics  
Galina Bledenbach, USBE  
Linus Holm, Psychology  
Suna Bensch, Computing Science  
Tommy Löfstedt, Radiation Sciences  
Frank Drewes, Computing Science  
Avinash Kumar Singh, Computing Science  
Oleg Seleznev, Mathematics & Mathematical Statistics  
Timotheus Kampik, Computing Science  
Erik Elmroth, Computing Science  
Johan Trygg, Chemistry

16.30-19.00 Mingle

Welcome!

The AI Sweden - UmU work group  
The AI@UmU workshop group: Kai-Florian Richter, Virginia Dignum, Juan Carlos Nieves, Mikael Hansson and Helena Lindgren

Welcome to the workshop on AI@UmU and Society. The workshop is the second, organized as part of the "AI Competence for Sweden" initiative. The workshop is open to you who are a researcher or teacher at Umeå University, or are working in an organisation that is interested in developing collaboration with Umeå University on research or education related to AI.

The workshop will be held on **Friday, December 14th, 8.30-14.30, at MIT-Place in the MIT Building.**

The workshop is for you who:

- want to join in forming tomorrow's AI at Umeå University,
- want to know more about ongoing national and international AI initiatives that Umeå University is part of,
- want to know how your organisation can collaborate with Umeå University on AI-topics,
- want to meet and learn what is ongoing in the field of artificial intelligence at Umeå University,
- want to participate in initiating a cross-faculty and cross-organisational discussion on how research and education on AI foundations, their applications and integration into society can be further expanded through interdisciplinary collaborations.

The day will contain presentations, inspiration talks and round table discussions. We invite researchers and teachers employed at Umeå University to give a brief presentation of the following:

- What AI or AI-related research are you/your group/your department pursuing, and/or what AI-related courses do you/your group/your department give
- What are the main research problems?
- What is lacking at Umeå University to advance the field?
- What specific educational effort(s) relating to AI do you find most urgent?

The questions are intentionally broad in order to collect a broad range of aspects as a first inventory.

We also invite representatives from industry and other organisations in society to present their needs and visions relating to AI education and research.

**Sign up no later than December 7.** Use [this link](#) to sign up.

When signing up, specify whether you would like to give a presentation. You will receive a notification shortly after October 7 whether you will be able to present, since the number of slots are limited.

Presentations should be sent to [Kai-Florian Richter](#) by **December 11** at the latest.

For questions contact [Kai-Florian Richter](#).

# 2018



UMEÅ UNIVERSITY

## Program

- 8.00-8.30 *Registration and coffee*
- 8.30-9.00 *Welcome and information about AI Initiatives in Sweden and beyond. Helena Lindgren, Umeå University  
Umeå Municipality's Industry Agenda. Marie Gidlund, Umeå Municipality*
- 9.00-10.00 *Explainable AI and Intelligent Products – Kary Främling, Computing Science  
Tieto and AI – Tobias Sundqvist, Tieto  
Mixing AI and HCI – Easy and Complex Interaction – Mikael Wiberg, Informatics  
Digital forensics: evidence analysis via intelligent systems – Juan Carlos Nieves, Computing Science  
What would it take for a robot to be conscious? Pär Sundström, Dept Historical, Philosophical and Religious Studies  
Persuasive Technologies – Helena Lindgren, Computing Science*
- 10.00-10.30 *Coffee*
- 10.30-11.20 *Inspiration talk: "Real AI is Social AI" – Frank Dignum, Utrecht University, Netherlands (abstract below)*
- 11.20-11.50 *Teaching natural language processing – Henrik Björklund, Computing Science  
HumLab Talks AI – Per Holm, HumLab  
AI in IceLab – Martin Rosvall, IceLab*
- 11.50-12.50 *Mingle lunch and coffee*
- 12.50-13.40 *Inspiration talk: "Co-Designing with Algorithms" – Elisa Giaccardi, Industrial Design Engineering, TU Delft, Netherlands, Umeå Institute of Design, Umeå University, Sweden (abstract below)*
- 13.40-14.00 *Bayesian networks for probabilistic inferences – Priyantha Wijayatunga, Statistics  
Intelligent agents and a new social order – Victor Kaptelinin, Informatics*
- 14.00-14.30 *Discussion and summary*

Welcome!

The AI Sweden – UmU work group  
The AI@UmU workshop group: Kai-Florian Richter, Virginia Dignum, Juan Carlos Nieves, Mikael Hansson and Helena Lindgren

## Nov 18: Between hype and hysteria: AI and the Humanities

**Place and time: Humlab, Nov 18, 10-16.00**

As artificial intelligence systems rapidly diffuse into our contemporary lifeworlds, the possible benefits and hazards of such systems demand continued ethical and political evaluation. More fundamentally, these systems, including social robots, sexbots, and biometric technologies, return us to the most basic questions of the humanities, such as "What does it mean to be human?" and "What are good lives for human beings?"

In our event "Between hype and hysteria: AI and the Humanities" these questions will be explored through two keynote addresses and a panel discussion. A first presentation by Dr. [Charles Ess](#) (University of Oslo) will review carebots, sexbots, "blessing robots," theomorphic robots, chatbots, and pre-emptive policing systems. Drawing on diverse perspectives from ethics, philosophical anthropology, and religious studies, he will show how these systems help us gain greater clarity regarding our basic assumptions regarding being human, love and sexuality, and our capacities for freedom and ethical judgment.

The second presentation by [Amanda Lagerkvist](#) (Uppsala University) will introduce the project *BioMe: Existential challenges and ethical imperatives of biometric AI in everyday lifeworlds* (part of the WASP-HS project) which explores the risks and potentials of AI-driven biometric technologies – e.g., fingerprint scanners, voice and facial recognition systems, sensors monitoring heart rate, and so on from the perspective of *existential media studies*, which focuses on the relationships between our ordinary human technicity, embodied vulnerability and ethical responsibility.

As final of the event a panel discussion will follow, providing the opportunity to pursue these and related issues with the speakers and participants. Gavin Feller, postdoctoral fellow at Humlab, will moderate the discussion.

### Schedule

10:00 Intro to event + coffee

10:15-11:30 TALK: "Love, Sex, G\*d, and Power: Being/becoming human in an AI world," Charles Ess

11:30 – 12:30 Lunch (for registered before Nov 12)

12:30 – 14:00 TALK: "BioMe: a new project on AI as existential media", Amanda Lagerkvist

14:00-14:30 Coffee break

14:30- 16:00 Panel discussion with Charles Ess and Amanda Lagerkvist moderated by Gavin Feller.

Welcome!

## Nov 22: AI Friday – a Social Science Perspective on AI

Welcome to learn more about AI!

The AI Friday workshops are organised as part of the national effort **AI Competence for Sweden** aimed at increasing knowledge about AI. *Mark also **November 29** and **December 6** in your calendars!*

**Date:** Friday November 22

**Time:** 9.15-15.00

**Location:** MIT-Place, the MIT-building

**Host:** Faculty of Social Sciences, Umeå University

**Register November 19 at the latest:** [Link](#)

### Program

9:15 **Welcome and introduction: AI Competence for Sweden @ UmU.** Speakers: *Gregory Neely*, Pro Dean of the Faculty of Social Sciences, and *Karin Danielsson*, AI Competence for Sweden, Faculty of Social Sciences

9:30-9:45 **Fundamentals of AI** for Cognitive Science students (Bachelor). Teaching a broad subject to a diverse group of 150+ students on campus. Speaker: *Adam Dahlgren Lindström*, Department of Computing Science, ICT Services and System Development

9:45-10:00 **The Ethics of Handling Medical Emergencies with Artificial Intelligence.** In this interactive presentation, we will explore a set of proposed ethical guidelines for the use of "black box" artificial intelligence in life-and-death medical emergencies. Speaker: *Erik Campano*, student

10:00-10:30 Coffee

10:30-10:45 **Organizational change and data analytics – Exploring the implications of AI for management, control and governance.** Speakers: *Vasilil Mankevich* and *Johan Sandberg*, Department of Informatics

10:45-11:00 **AI in business education: Insights from the marketing course.** Speaker: *Galina Biedenbach*, Umeå School of Business, Economics and Statistics (USBE)

11:00-11:20 **Statistical Learning (Machine Learning) in Courses for Social Science Students.** Speaker: *Marla Karlsson*, Umeå School of Business, Economics and Statistics (USBE)

11:20-11:40 **Negotiating Visibility – Interaction Beyond Explainable AI.** Speaker: *Mikael Wilberg*, Department of Informatics



UMEÅ UNIVERSITY

# 2019

11:40-12:00 Distribution of lunch

12:00-12:15 **Introduction: Interdisciplinary panel.** Moderator: *Karin Danielsson*

12:15-13:00 Panel (and lunch) **Title: Disciplinary and Interdisciplinary AI-research**

Panellists:

- Faculty of Social Sciences: *Jan Leiddö*, Department of Law
- Faculty of Arts: *Marlene Johansson Falk*, Department of Language Studies
- Faculty of Medicine: *Jenny Persson*, Department of Molecular Biology
- Faculty of Science and Technology: *Timotheus Kampik*, Department of Computing Science

13:00-13:20 **Feminism, Care and Artificial Intelligence.** Speaker: *Anna Croon*, Department of Informatics

13:20-13:40 **Using Machine Learning tools in applied research.** Speaker: *Anders Lundquist*, Umeå School of Business, Economics and Statistics (USBE), Department of Integrative Medical Biology (IMB)

13:40-14:00 **Artificial Intelligence from a pedagogical perspective.** The presentation will give a pedagogical perspective on AI with two practical examples of ongoing research. Speaker: *Eva Mårell-Olsson*, Department of Applied Educational Science

14:00-14:20 Coffee

14:20-14:40 **What you want to know: Using AI to predict and promote the interplay between human curiosity and knowledge acquisition.** Speaker: *Linus Holm*, Department of Psychology

14:40-15:00 **Final discussion and closure.** Speaker: *Karin Danielsson*

Nov 29: AI Friday – Humanities and AI

## Is there a Human in our AI Future?

**Date:** Friday November 29

**Time:** 12.00-14.10

**Location:** MIT-Place, by the main entrance of the MIT Building

**Host:** Faculty of Arts and Humanities, Umeå University

**Register:** November 27 latest at 10.00, please, use this [link](#).

### Program

**12.00-12.10 Welcome + lunch sandwich & coffee + short info about AI@UmU**

**12.10-12.40 Humanistic Perspectives on AI: First Looks**

**Charles M Ess, Professor in Media Studies, University of Oslo**

I will first describe what makes the current wave of interest in AI different from previous cycles, and then discuss specific ways AI and robotic technologies help us explore central human questions – of self-knowledge, ethics and ethical judgment, and sex, love, eros and embodiment (sexbots). The comments on self-knowledge and ethical judgment further help prepare us for the more detailed explorations in **On Artificial Minds, (Pär Sundström)** and **Do Autonomous Systems Make Us More or Less Autonomous? (Kalle Grill)**. The discussion of sexbots likewise will be further expanded by the discussions of **Human/AI Relationships in Speculative Fiction (Maria Lindgren Leavenworth)**, **Natural language processing and spatial cognition: What can robots learn from linguistic patterns? (Marlene Johansson Falck)** and **AI and Manual Labour (Johan Jarlbrink)**

**12.40-12.55 On Artificial Minds**

**Pär Sundström, Professor in Philosophy, Umeå University**

I will discuss whether it is possible to build artificial minds. Is it possible to build machines that can see, think, feel, solve problems, invent, wonder, dream, wish, mourn, love, and create and appreciate art like we do? Or who even can do some of these things better than we human beings can? I will also discuss risks and prospects of such a scenario.

# 2019



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**12.55-13.10 Do Autonomous Systems Make Us More or Less Autonomous?**

**Kalle Grill, Associate professor in Philosophy, Umeå University**

Like all technology, autonomous computer systems can increase our ability to influence our environment and our lives. In particular, by surveying our environment and issuing tips and reminders, future AI systems may support us in living in greater accordance with our own values. At the same time, outsourcing cognitive and social tasks to machines may leave us less capable, less responsible, and less autonomous.

**13.10-13.25 Human/AI Relationships in Speculative Fiction**

**Maria Lindgren Leavenworth, Associate Professor of English Literature, Umeå University**

In the wealth of literary depictions of Artificial Intelligence it is not only technological advances that are imagined, but also new forms of love, family and kinship. By looking at a small sample of texts, I address what human/AI relationships reveal about ethics, body and identity.

**13.25-13.40 Natural language processing and spatial cognition: What can robots learn from linguistic patterns?**

**Marlene Johansson Falck, Associate professor of English linguistics, Umeå University**

The ways in which natural language users construe different concepts give us an idea of how they structure their thinking. They provide information of how speakers structure their experiences of both concrete, real world physical objects, such as houses, or less abstract concepts such as our concepts of the air around us, love, or a diet. Patterns such as these might be valuable for robotic world modelling.

**13.40-13.55 AI and Manual Labour**

**Johan Jarlbrink, Associate professor in Culture- and Media Studies**

Supervised machine learning requires training data tagged and classified by human beings. Although it is often outsourced to and hidden in facilities in Eastern Europe and Southeast Asia, manual work is essential for many AI systems. I'm interested in these repetitive tasks, how they are built into the infrastructure that make smart machines possible.

**13.55-14.10 Q & A + summary**

*The AI Friday is an event organised as part of the national effort AI Competence for Sweden aimed at increasing knowledge about AI: <https://umuais.cs.umu.se/ai-sweden/>*

## Dec 6: AI Friday – a Medical and Health Perspective on AI

### Welcome to learn more about AI!

The AI Friday workshops are organised as part of the national effort **AI Competence for Sweden** aimed at increasing knowledge about AI.

**Date:** Friday December 6

**Time:** 12.00-15.00

**Location:** MIT-Place, the MIT-building

**Host:** Faculty of Medicine, Umeå University

**If you register** by December 4 latest at 10.00, you also get a sandwich and coffee, please, use this [link](#).

### Program

12.00-12.30 Lunch sandwich

12.30-13.00 Welcome and introduction: AI Competence for Sweden @ UmU **Katrine Riklund**, pro-vice-chancellor/professor Diagnostic Radiology, **Helena Lindgren and Tommy Löfstedt**, AI Competence for Sweden @ UmU work group

13.00-13.12 "Using AI for segmentation and quantification in medical ultrasound imaging", **Christer Grönlund**, associate professor Radiation Physics/Medical Technology

13.12-13.24 "Using hybrid PET/fMRI for simultaneous multimodal imaging of human brain function", **Lars Jonasson**, post-doc Department of Integrative Medical Biology (IMB)

13.24-13.36 "UMeHealth as infrastructure for AI-based eHealth across Umeå university and regional healthcare providers", **Karin Wadell**, professor Physiotherapy, UMeHealth

13.36-13.48 "Deep learning in medical imaging", **Tommy Löfstedt**, senior research engineer Radiation Physics

13.48-14.00 Coffee break

14.00-14.12 "Ongoing projects related to risk prediction at the Department of Radiation Sciences – Current and planned data collections", **Sophia Harlid**, senior research engineer Oncology

14.12-14.24 Title: "Compressive Sensing and Statistical Learning with Sparsity in MRI/PET measurements for cancer therapy assessment", **Jun Yu**, professor Department of Mathematics and Mathematical Statistics

14.24-14.36 "Rörelsemönster utifrån laboratoriebaseade data – potential för AI-applikationer", **Charlotte Häger**, professor Physiotherapy

14.36-14.48 Title: TBA, **Johan Trygg**, professor Department of Chemistry

14.48-15.00 "Prediktiv modell för vårdtyngd och vårdtid på intensivvården", **Magnus Hultin**, Institutionen för kirurgisk och perloperativ vetenskap, Centrum för AnOpIVA Västerbotten

15.00-15.15 Closing remarks

# 2019



UMEÅ UNIVERSITY

### Oct 4: What is AI and Responsible AI?

Do you want to know more about what AI and responsible AI is? Juan Carlos Nieves and Virginia Dignum will tell you more:

**When:** Fredag, 4 October, 8.40-10.00

**Where:** MIT-Place in MIT-huset

The seminar is part of the course [ELSEC](#), organised through the *AI Competence for Sweden* initiative.

### Oct 4: Real AI is Social AI

Do you want to know more about what socialAI is? Frank Dignum will tell you more:

**When:** Fredag, 4 October, 13.00-13.45

**Where:** MIT-Place in MIT-huset

The seminar is part of the course [ELSEC](#), organised through the *AI Competence for Sweden* initiative.

### Oct 11: what are collaborative AI and explainable AI?

Do you want to know more about what collaborative AI and Explainable AI are? Helena Lindgren and Kary Främling will tell you more:

**When:** Fredag, 11 October

**8.30-9.15: What is Collaborative AI? (Helena Lindgren)**

**9.15-10.00: Explainability (Kary Främling)**

**Where:** MIT-Place in MIT-huset

The seminars are part of the course [ELSEC](#), organised through the *AI Competence for Sweden* initiative.

### Oct 11: Development of Responsible AI

Do you want to know more about how to develop responsible AI? Andreas Theodorou will tell you more:

**When:** Fredag, 11 October, 13.00-13.45

**Where:** MIT-Place in MIT-huset

The seminars are part of the course [ELSEC](#), organised through the *AI Competence for Sweden* initiative.



## Dec 12: AI Friday goes Thursday – AI Efforts beneficial to Industry and Society?

### ***Massive Effort on AI research and Education, but what's in it for industry and society?***

Welcome to participate in a workshop where we will present ongoing local and national efforts to build competence in artificial intelligence (AI) in society, and to accelerate collaborations across academia and society to increase knowledge and innovation relating to AI. A new project office for supporting collaborations relating to AI across academia and public and private organisations will be introduced, and we are also happy to present the most recent employed Professor on AI, Diego Calvanese, recruited as part of the massive efforts on AI at Umeå University.

We also invite public or private organisations, and staff at Umeå University, to present their common, ongoing projects relating to AI that they have together across academia, industry and/or public organisations. Also, if your company/public organisation has particular needs for collaboration with Umeå University, you are welcome to propose presentations regarding this. Please, propose this when you register for the day, but no later than Dec 10, at 10.00.

**If you register** by December 10 latest at 10.00, you also get a vegetarian sallad box and coffee, please, use this [link](#).

**Date:** Thursday December 12, 2019

**Time:** 11.30-15.00

**Location:** MIT-Place, the MIT-building

### Preliminary Schedule

#### **11.30 – 13.10 AI competence developments**

11.30 – 12.00 serving lunch sallad, welcome and Introduction to AI efforts at Umeå University and beyond

12.00-13.10 Presentations from *AI Competence for Sweden* activities and related efforts by among others **Virginia Dignum**, **Juan Carlos Nieves**, **Thomas Kvist**, **Kalle Prorok** and representatives from Volvo and IT-companies.

# 2019



UMEÅ UNIVERSITY

#### **13.10-15.00 Efforts on AI Research beneficial to Industry and Society**

13.10-13.20 **Erik Elmroth**, head of the Department of Computing Science: More on AI efforts at Umeå University and beyond, a new project office for collaboration across academia and organisations in society, and introducing Umeå University's most recently employed Professor on AI:

13.20-14.00 **Professor Diego Calvanese**: "Virtual Knowledge Graphs for Data Access and Integration"

#### *Biography*

Diego Calvanese is since November employed as a Wallenberg visiting Professor at the department of Computing Science, Umeå University. He is also full professor at the Research Centre for Knowledge and Data (KRDB), within the Faculty of Computer Science of the Free University of Bozen-Bolzano (Italy), where he teaches courses on knowledge bases, databases, data integration, ontologies, and theory of computing. His research interests include formalisms for knowledge representation and reasoning, ontology-based data access and integration, description logics, Semantic Web, and data-aware process management. He is the author of more than 350 refereed publications, including ones in the most prestigious venues in artificial intelligence and databases, with over 30.000 citations and an h-index of 69, according to Google Scholar. In 2012-2013 he has been a visiting researcher at the Technical University of Vienna as Pauli Fellow of the "Wolfgang Pauli Institute". He has been the program chair of the 34th ACM Symposium on Principles of Database Systems (PODS-2015) and the general chair of the 28th European Summer School in Logic, Language and Information (ESSLI-2016), and he will be the program co-chair of the 16th Int. Conference on Principles of Knowledge Representation and Reasoning (KR-2020). He is a Fellow of the European Association for Artificial Intelligence (EurAI).

14.00-15.00 *Coffee and examples of needs, applications and collaborations.*

**Anneli Ågren**, SLU: "Improving sustainable spatial planning using maps developed by artificial intelligence"

**Kenneth Bodin**, Algoryx AB: "Simulation driven machine autonomy"

**Nina Sundström**, CMTS, MT-FoU, Region Västerbotten: "New methods based on AI for big data analysis within Biomedical Engineering"

**Mats Johansson**, UMIT, UmU: "Data-driven identification of bottlenecks and high-risk patients"

**Lili Jiang**, CS-UmU: "Privacy Preservation and Machine Learning"

**Frank Dignum**, CS-UmU: "Social theory, AI and practice"

15.00 – 15.10 Summary and Closing

**Host:** Faculty of Science and Technology, Umeå University

The AI workshops are organised as part of the national effort **AI Competence for Sweden** aimed at increasing knowledge about AI.

# AI Friday Feb 21: Digital Impact North Kick-off

Framtidens fabriker, smarta städer, digitala vårdtjänster och sociala robotar är några exempel på konkreta resultat som kraftsamlingen Digital Impact North ska bidra till. Satsningen invigs fredag 21 februari i MIT-huset, Umeå universitet, med bland andra Hans Adolfsson, rektor Umeå universitet, och Peter Juneblad, näringslivschef, Umeå kommun. Läs mer här: <http://digitalimpactnorth.se/>

# 2020

AI Competence for Sweden vid Umeå universitetet bjuder in till fyra kostnadsfria lunchseminarier online med teman och diskussioner om hur AI kan påverka yrkesroller inom industri, hälso-sjukvård, skola och kreativa näringar.

Anmäl dig här nedan, observera att du anmäler dig till respektive lunchseminarium. Seminarierna är kostnadsfria.

**AI@Lunch - fyra lunchseminarier om AI vid Umeå universitet, hösten 2020**

## 1 December, kl 12.10-12.50: Hur kan AI påverka kulturarbetares yrkesroller?

Hur konstnärliga praktiker påverkas av tekniken bakom AI och hur det konstnärliga tänkandet kan berika och samverka med AI-forskningen.

### Talare:

Carl-Erik Engqvist, konstnärlig ledare, Humlab, Umeå universitet

### Anmälan 1 december:

Anmäl dig till [AI@Lunch](#), 1 december [📧](#).

## 29 september kl 12.10-12.50 Robokalyps eller jobbskapare - framtidens arbetsliv med AI

Förändringens vindar är starka. Globalisering, urbanisering, klimatkris och nu pandemi – för att nämna några. Men den mest genomgripande förändringen i vår tid är digitaliseringen och dess kraft och betydelse. Och till den hör AI, robotar och automation. Vad kommer det att göra med våra yrken och vårt arbetsliv? Vilka nya uppgifter kan vi få hjälp med? Helt säkert dyker nya arbetsområden och yrkestitlar upp.

### Talare:

Martin Rosendahl, Rådgivare och projektledare på omställningsorganisationen TRR inleder med en övergripande presentation med utgångspunkt i TRR:s rapport "Framtidens arbetsliv är här!"

**20 oktober kl 12.10-12.50 Hur kan AI påverka hälso- och sjukvårdens yrkesroller?**  
(Mer information kommer inom kort).

### Talare:

Dr Helena Fordell, specialistläkare i neurologi, Norrlands universitetssjukhus  
Institutionen för klinisk vetenskap, Umeå universitet  
Andreas Lundqvist, enhetschef vid Glesbygdsmedicinskt centrum, Region Västerbotten

Anmälan 20 oktober:

Anmäl dig till [AI@Lunch](#), 20 oktober.

## 10 november kl 12.10-12.50: Hur kan AI påverka yrkesroller inom skola?

OBS, detta seminarium hålls på engelska.

AI används alltmer inom offentlig sektor, inklusive utbildning. Digitalisering och AI förändrar sättet vi lär oss, undervisar, handleder, samarbetar och arbetar på skolor och i andra utbildningsmiljöer. För närvarande finns det en variation i hur långt länder har kommit för att införliva AI i utbildning och annan offentliga sektorer. Estland har under ett antal år haft som mål att införa AI i alla delar av landets offentliga tjänster, vilket medfört flertalet insikter.

Sverige har under många år arbetat med digitalisering i utbildning och därmed förändrat läraryrollen till att använda flera digitala verktyg. AI inom utbildning verkar ha många möjligheter, men vad har vi sett hittills och vad kan vi förvänta oss inom en snar framtid?

Seminarieret hålls på engelska.

### Talare:

Ott Velsberg, Andmete juht / Government Chief Data Officer, Ministry of Economic Affairs and Communications, Republic of Estonia  
Docent Eva Mårell-Olsson, Pedagogiska institutionen, Umeå universitet



UMEÅ UNIVERSITY

## AI Competence and Education at UmU: What's next?

Fri  
25  
MAR

Friday 25 March, 2022  
at 11:00 - 14:00

Vardagsrummet, Humanisthuset

Welcome to join a workshop on cross-faculty education and competence development in AI for today and tomorrow's need for competence. The purpose with the workshop is to inform about what has been done 2018-2021 on development of education in AI at Umeå University as part of AI Competence for Sweden, about the new program WASP-ED, and to discuss further developments and visions regarding AI education.

### What and for whom?

It is an opportunity for teachers and researchers at Umeå University to continue the dialogue across subject and faculty boundaries on AI education for today's and tomorrow's workforce needs.

The workshop will be held in english.

### Overview of the programme

11.00-12.00 Introduction and summary of training activities

12.00-13.00 Lunch and discussion

13.00-13.45 Panel discussion:

- [Karolina Broman](#), Chair of the Education Committee of the Faculty of Science and Technology
- [Marlene Johansson Falck](#), Vice Dean of the Faculty of Humanities
- [Ingeborg Nilsson](#), Member of the Council for AI (MAI) at the Faculty of Medicine
- [Ann-Louise Silfver](#), Vice Dean, Faculty of Social Sciences

13.45-14.00 Summary

14.00- Continued discussion and mingling

### Registration

Register via [this form](#).

### More about AI Competence for Sweden

Umeå University is part of the government's [AI Competence for Sweden](#) initiative together with other Swedish universities. The initiative was initiated in 2018. The aim is to increase knowledge of AI in society through a national platform for education and research. Read [more here](#).

Organizer: [Umeå University](#)

Event type: Workshop

# 2022

## TO BE CONTINUED



UMEÅ UNIVERSITY

# AI COMPETENCE OF SWEDEN @ UMU

## CURRENT AND EARLIER WORK GROUP MEMBERS 2018-2021

- Helena Lindgren (sammankallande)
- Karin Danielsson (Samhällsvetenskapliga fakulteten)
- Per Holm (Humlab, Humanistiska fakulteten)
- Tommy Löfstedt (Medicinska fakulteten)
- Anna Mannelkvist (Externa relationer)
- Tufve Nyholm (Medicinska fakulteten)
- Ola Ringdahl (Teknisk- naturvetenskaplig fakultet)
- Patrik Rydén (Teknisk- naturvetenskaplig fakultet)
  
- Mikael Hansson (kommunikatör)



UMEÅ UNIVERSITY



AI COMPETENCE  
FOR SWEDEN