



Aalto University  
School of Science

# Major in Software and Service Engineering: Orientation Week Event

The SSE Faculty

September 6<sup>th</sup> 2021

# Schedule

Time	Subject
12:30	<b>Overview of the SSE Major, Prof. Casper Lassenius</b>
12:45	Introduction of the new students
13:15	Software Engineering Track, Prof. Casper Lassenius, Fabian Fagerholm, Jari Vanhanen
13:30	Break
13:35	Service Design and Engineering Track, Prof. Marko Nieminen, Prof. Marjo Kauppinen, Prof. Johanna Viitanen, Mika Nieminen
13:50	Enterprise Systems Track, Kari Hiekkanen, Mikko Heiskala
14:05	Portfolio in SSE course info, Jari Vanhanen
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14:20	Meet & Greet current SSE students, Julia Helander, Henri Tran, Anni Vuorinen
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15:15	End of event

# Why Software and Service Engineering?

- The world runs on software
  - Economies
  - Societies
  - Health and well-being
- It is crucial that we know how to effectively and efficiently build systems and services based on software

# Why Software and Service Engineering

- Megatrends
  - Digitalization of products and services is pervasive throughout society
    - New business models emerge that might revolutionize and/or disrupt existing businesses
    - Lots of money to be made 😊
  - The Internet of things (IoT), will have a significant impact on everything from business to life in general
    - Healthcare
    - New services
  - Artificial Intelligence and Machine learning – it is mostly software!

# Peculiarities of the SSE major

- Problems are typically real-world design problems that show characteristics of so-called wicked problems
  - Often ill-defined
  - There are many, possibly equally valuable candidate solutions
    - There are often no “perfect” or single “correct” solution
    - Different stakeholders might have conflicting opinions about the problem or solution
  - You cannot know the solution until you have developed it
  - Sometimes understanding the problem is more difficult than building the solution
- You will learn by doing as well as by reading
  - Significant amount of practical project work
  - Often with real-world customers

# Software and Service Engineering: Tracks

Software  
engineering

Service design  
and engineering

Enterprise  
systems

Courses are based on research done in close collaboration with companies.

CS-E4920 Portfolio in Software and Service Engineering



Casper Lassenius



Marjo Kauppinen



Marko Nieminen



Johanna Viitanen



Kari Hiekkanen

# Objectives

- You learn how to
  - Design
  - Develop
  - Manage

... digital products and services that

  - Create value
  - Satisfy user needs and wants

... within modern organizations

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# Participants

- Where did you do your B.Sc.?
- Why did you choose SSE?

- Noushed Ahmed
- Anastasiia Burkova
- Julia Helander
- Eetu Hyyryläinen
- Sini Hölsä
- Joonas Järvenpää
- Katriina Kalliokoski
- Robin Karlsson
- Mubashir Mohamud
- Ville-Matti Mäkinen
- Kohdy Nicholson
- Rasmus Palmberg
- Minerva Pelayo
- Elizaveta Petrova
- Ville Pihlava
- Jarkko Ruismäki
- Ville Saarinen
- Linus Sundström
- Zsombor Szabo
- Noora Turunen
- Andriani Yunita
- Anastasiia Vorobeva
- Niklas Sivaro
- Elis Viitanen
- Petri Haajanen
- Iira Hannula
- Joel Oksanen

**...and any other students present**

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# Software Engineering Track

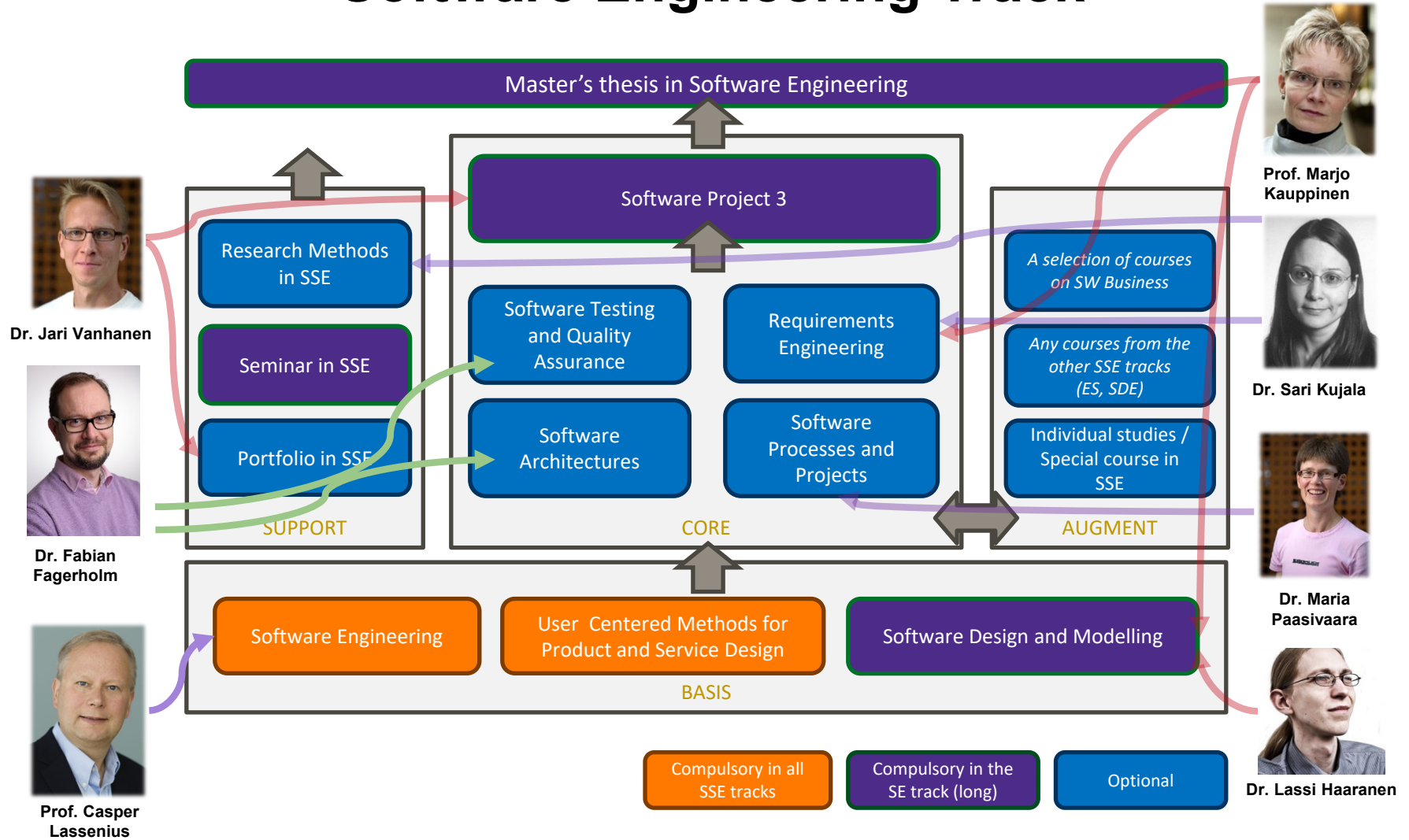
- Focuses on understanding software development in professional contexts
  - Working in and managing teams and organizations
  - Software engineering activities and related methods
    - Requirements engineering
    - Specification and Design (architectures, low-level)
    - Implementation
    - Testing and quality assurance
    - Deployment
  - Traditional and modern approaches
    - Waterfall, Agile, Scrum, XP, Lean, Continuous SE
  - Working with real customers



# Why Software Engineering

- There is a huge need for software engineering experts in industry
- Many positions, both management, and expert (e.g. architect) are well paid
- Most problems in software projects are due to problems related to SE rather than, e.g. technologies
- Gives a good basis for software entrepreneurship

# Software Engineering Track



<https://into.aalto.fi/display/enccis/Software+and+Service+Engineering+%28SSE%29+2020-2022>

# Outcome

- Typical SE roles
  - Software developer
  - Tester
  - Architect
  - Quality/test manager
  - Process developer
  - Project manager
  - Product manager
  - Higher level manager
  - Entrepreneur
- Master's theses
  - Typically done in industry
  - Empirical, action research
    - Process improvement
    - Technology introduction
    - (Different kinds of experiments)
  - Data gathering methods
    - Interviews
    - Questionnaires
    - Product / process data
    - ...

Questions?



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# Agenda - Discussions

- **14:20 – 14:45** Meet and greet some current SSE students
  - Julia Helander, Henri Tran, Anni Vuorinen
- **14:45 – 14:55** Four breakout rooms with 4-5 new SSE students
  - Get to know the other students in your room
  - As a team, prepare 2 new questions related to the SSE studies
    - Write them to:  
<https://docs.google.com/spreadsheets/d/1GEoxN0xy09ummmBJu4xdfyyZ2PX X90dGmbSQndc-vFM/edit?usp=sharing>
- **14:55 – 15:15** Two (three?) breakout rooms with staff present
  - Discussing the questions with the staff and other students

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