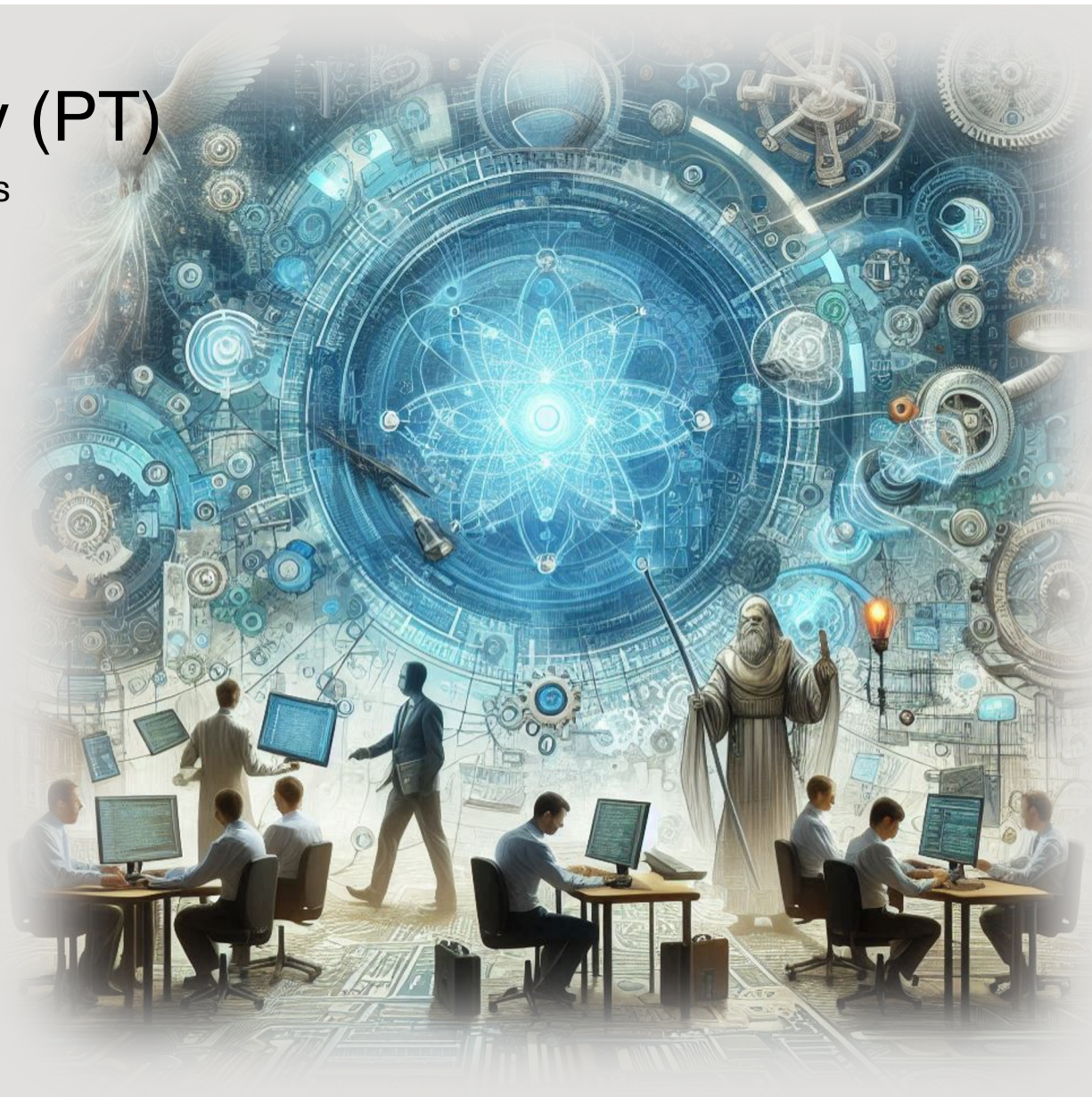


Programming Technology (PT)

Develops tools and programming languages that are fundamental to all IT-systems.

- Paulo Ferreira
- Michael Kirkedal Thomsen
- Stein Michael Storleer
- Lars Tveito
- Eyvind Wærsted Axelsen
- Tobias Opsahl
- Brage Keiserås (+ more PhDs)



Programming Technology (PT)

Develops tools and programming languages that are fundamental to all IT-systems.

Interested in:

- Understanding the interface between systems and programming: e.g. phone, parallelism, energy consumption
- Understanding foundation and application of alternative programming models: e.g. ubiquitous computing and quantum computing
- Knowing what is behind programming languages



IN3030/IN4330 – Effective Parallel Programming (Spring)

The course provides knowledge in effective uses of parallelism in a multi-core computer and especially provide insight into how and when Java can be used to develop parallel programs that are clearly faster or easier than a sequential program that solves the same problem.

- How to parallelize a sequential program.
- Learning-by-doing: You write 5 larger parallel programs, test them and time them.
- How caching affects performance
- Evaluation: obligs and written exam.
- Web page:
 - <https://www.mn.uio.no/ifi/english/people/aca/ericbj/>
 - <https://www.uio.no/studier/emner/matnat/ifi/IN3030/index-eng.html>



N5630 – Programming Language Implementation and Formalisation (Spring)

This course will introduce you to the different aspects of programming language design and give you a deeper understanding of theoretical aspects of programming, with a focus on functional programming.

- Work with functional programming (Haskell) and concepts such as higher order functions, type classes, functors and monads.
 - Implement parsers, property-based testing and interpreters.
 - Introduce programming language theory: Formal semantic and type systems
 - Reasoning about properties of programming languages
-
- Web page:
 - <https://www.mn.uio.no/ifi/personer/vit/michakt/>
 - <https://www.uio.no/studier/emner/matnat/ifi/IN5630/index.html>



IN5380 – Compiler Construction (Spring)

This course covers principles and techniques central for compilation and spanning all phases of conventional compilers. That includes syntactic and semantic analysis, how to organize data at run-time and code generation.

- Insight into established techniques and principles underlying compilers.
 - Implement the syntactic phase of a compiler.
 - Learned crucial basic techniques for later phases of a compile.
 - learning how a compiler concretely deals with different linguistic aspects
-
- Web page:
 - <https://www.mn.uio.no/ifi/english/people/aca/larstvei/>
 - <https://www.uio.no/studier/emner/matnat/ifi/IN5380/index.html>



IN5700 – Fog and Cloud Computing (Autumn)

Understand the basic principles and concepts of fog computing systems and their relation to other models such as cloud computing.

- Practical simulation (using Omnet++)
- Evaluation: project, presentation, oral exam
- Web page:
 - <https://www.mn.uio.no/ifi/english/people/aca/paulofe/>
 - <https://www.uio.no/studier/emner/matnat/ifi/IN5700/index-eng.html>



Programming Technology (PT)

Develops tools and programming languages that are fundamental to all IT-systems.

Interested in:

- Understanding the interface between systems and programming : e.g. phone, parallelism, energy consumption
- Understanding foundation and application of alternative programming models: e.g. ubiquitous computing and quantum computing
- Knowing what is behind programming languages

Please contact a group member if you have questions

<https://www.mn.uio.no/ifi/forskning/grupper/pt/>

