Joint Master's Programme in Software Engineering
Introduction for new master students – 2016-08-17

- Supervisors: HiB or UiB or joint, possibly also external
- Two branches, determins compulsory courses
  - PU – software engineering:
    INF234(A), MOD250(A), MOD251(S)
  - PUT – programming theory: INF234(A) and 3 of
    INF220(A), INF225(I-A1), INF329(I-A1),
    INF223(S), INF227(S), or INF210(I)
- Remaining courses freely selected from HiB / UiB
- Two master thesis variants (talk to supervisor)
  - Long: 60 stp, deadline 1 June 2018
    Research/development oriented, needed for PhD
  - Short: 30 stp, strict start/end dates
    More structured studies, 3 extra courses

What is "programutvikling" (PUT)?

- English: Software Engineering
  In practice: computer programming using experience, tools, common sense and a tiny bit of theory.
- Our research at II/UiB aims to reverse this order:
  1. a solid theoretical base
  2. innovative themes
  3. developing tools
  4. gaining experience
- Research and projects range from highly theoretical, to highly practical! — independently of chosen track or long/short thesis

Staff of PUT

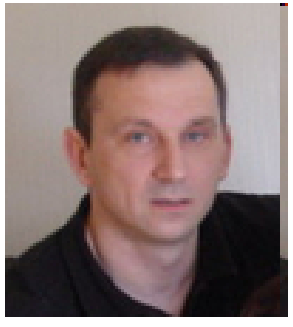
Marc Bezem

Magne Haveraaen

Torill Hamre (II)

Anya Bagge

Jaakko Järvi



Michał Walicki

Uwe Wolter

Research Themes & Supervisors

- Programming languages & tools (Anya, Jaakko, Magne)
  - Magnolia – our research language
  - User interface logic – a new programming model
  - Tools for software development and evolution
  - Software (language) engineering
  - High integrity systems (reliable, robust, safe, secure)
- Logic & foundations (Marc, Michał, Uwe)
  - logical systems & formal proofs
  - foundations of model driven engineering
  - theory of computation
  - type theory
- Geographical information systems (Torill)
- Other topics (everybody)
  - in cooperation with industry / research institutions / others
  - proposed by students
  - databases

Master Topics & Courses

- Many topics require specific background knowledge
  – take specialised course before starting the thesis
- Many courses have irregular schedules
  – take the course when it is available
- Fun courses you may want to include
- All compulsory courses have regular schedules
  – autumn courses can be taken 1st/3rd semester
  – spring courses can be taken 2nd/4th semester
- Ask advice from supervisors
  – ask advice early!
  – Courses start next week

Courses for PU/PUT - 1st semester

Autumn 2016

– • INF 220 Program specification (Magne Haveraaen)
– • INF 225 Program Translation (Anya Bagge)
– INF 226 Software security (Samson Gejibo)
– • INF 329 Selected Topics in Programming Theory (Jaakko Järvi)
– *•INF 234 Algorithms
– * MOD 250 Advanced Software Technologies
– MOD 252 Agent Technologies
– MOD 351 Introduction to Grid and Cloud Computing

All semesters (ask supervisor)

– INF 219 Programming Project (possibly bachelor)
– INF 319 Programming Project (master)

Courses for PU/PUT - 2nd semester

Spring 2017
– INF 222 Programming Languages (Jaakko Järvi) = INF 329 aut 2016
– • INF 223 Category Theory (Uwe Wolter)
– • INF 227 Introduction to logic (Marc Bezem?)
– * MOD 251 Modern Software Development Methods
– MOD 350 Model driven Software Development

All semesters (ask supervisor)
– INF 219 Programming Project (possibly bachelor)
– INF 319 Programming Project (master)

Courses for PU/PUT - 3rd semester

Autumn 2017
– INF 214 Concurrent programming (?)
– • INF 220 Program specification (?)
– INF 226 Software security (?)
– *•INF 234 Algorithms
– * MOD 250 Advanced Software Technologies
– MOD 252 Agent Technologies
– MOD 351 Introduction to Grid and Cloud Computing

All semesters (ask supervisor)
– INF 219 Programming Project (possibly bachelor)
– INF 319 Programming Project (master)

Courses for PU/PUT - 4th semester

Spring 2018
– INF 222 Programming Languages (Jaakko Järvi)
– • INF 223 Category Theory (Uwe Wolter)
– • INF 227 Introduction to logic (?)
– * MOD 251 Modern Software Development Methods
– MOD 350 Model driven Software Development

All semesters (ask supervisor)
– INF 219 Programming Project (possibly bachelor)
– INF 319 Programming Project (master)

Deadline for thesis: 1 June 2018

It is not recommended to take courses in this semester!

Courses for PU/PUT - irregular

Irregular semesters (ask supervisor)
– INF 210 Modelling of Computing
– INF 328 Elements of Programming Languages
– INF 329 Selected Topics in Programming Theory

Some fun/filler courses
– INF/INFO 207 Social Networks Theory (autumn)
– INF 236 Parallell programmering (spring) – requires INF 234
– INF 250 Foundations of data-oriented visual computing (spring)
– INF 251 Computer Graphics (autumn) - requires INF 250
– INF 283 Introduction to Machine Learning (autumn)