Course organisation

MPRI 2–6: Abstract Interpretation,
application to verification and static analysis

Antoine Miné

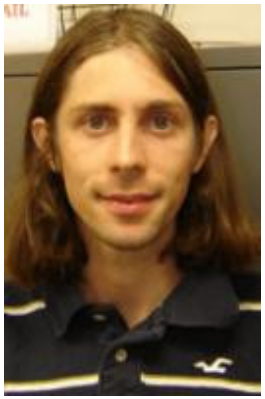
year 2014–2015

course 00
17 September 2014

Course topics

- **foundation** of abstract interpretation
  - order and approximation theory
  - fixpoint program semantics
- **bricks** of static analyzers
  - numeric abstract domains (non-relational, relational, specific)
  - symbolic abstract domains
  - memory abstract domains (pointers, shape analysis)
  - domain combiners (reduced products, partitioning)
- domain-specific **static analyses**
  - analysis of concurrent programs
  - analysis of mobile systems
  - analysis of biological systems
  - industrial application: analysis of embedded programs

Teaching team



Jérôme Feret

Antoine Miné

Xavier Rival

Invited Lectures

Syllabus and exams

Visit regularly:

http://www.di.ens.fr/~mine/enseignement/mpri/2014-2015/

- latest information on course dates
- course slides (preliminary, and consolidated after course)
- course assignments
- M2 internship proposals (updated regularly)

Exams:

- written exam on 3 December 2014
- oral exam 11 March 2015

  (read a scientific article, present it, answer questions)

Course assignments

After each course, a list of suggested homeworks:

- a reading assignment (e.g., article related to the course)
- an exercise (e.g., a proof of a theorem)
- an experiment (e.g., using an analysis tool)

Not evaluated by the teacher, gives no credit.

Goal:

- self-evaluation after each course
- preparation for the exam

$\Longrightarrow$ highly recommended

Additional material:

- previous exams
- course bibliography (in the slides; reading is not mandatory)