

Course organisation

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

Antoine Miné

year 2015–2016

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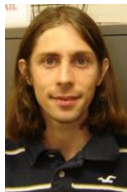
16 September 2015

- **foundation** of abstract interpretation
 - **fixpoint** program **semantics**
 - **order** and **approximation** theory
 - **hierarchy** of 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** and **distributed** systems
 - analysis of **biological** systems
 - **industrial application**: analysis of embedded programs

Teaching team



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Visit regularly:

<https://www-apr.lip6.fr/~mine/enseignement/mpri/2015-2016/>

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

Exams:

- written exam on 2 December 2015
- oral exam 9 March 2016? (to be confirmed)
(read a scientific article, present it, answer questions)

Course assignments

On the web page, **highly recommended homeworks** after each course:

- an **exercise**: proof of theorem, former exam, etc.
- a **reading assignment**: an article related to the course
- an **experiment**: using a tool

Not evaluated by the teacher, gives no credit.
The solution of the exercises is also given.

Goal:

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

Additional material:

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