Welcome to all!

https://lmf.cnrs.fr/deptinfo-ens/M2/
Contact

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Masters 2 Research at ENS-P.S.

- General Masters 2 Research meeting: Thursday, September 2nd, 2pm (... in the past)

- Make a **start** on a scientific domain for which **you feel inclined**

- **Acquire** a specialized scientific culture

- Foster your **skills**: autonomy, analysis, communication, etc.

- **Pioneer** a field with high impact

- **Represent** ENS Paris-Saclay
Possible Tracks in Computer Science

- **MPRI**: Master Parisien de Recherche en Informatique
  Université de Paris, ENS Paris, Université Paris-Saclay, IPP

- **MVA**: Mathématiques, Vision et Apprentissage
  ENS Paris-Saclay

- **MPI**: Master Recherche Informatique
  Graduate School, Université Paris-Saclay

- **LMFI**: Logique, Mathématique, et Fondements de l’Informatique
  Université de Paris

- **STL**: Master Informatique parcours « Science et Technologie du Logiciel »
  Sorbonne Université
• MPRI is the default masters program for computer science students hence let me concentrate on it

• MPRI meeting: Monday, September 13th, 2021, 14h amphithéâtre 9E Halle-aux-Farines RER C / M14 Bibliothèque François Mitterrand Tram T3 Avenue de France

• Courses will take place in building Sophie Germain
Two kinds of courses: **full** courses: 48 hours, 6 ECTS | **half** courses: 24 hours, 3 ECTS

List of modules on [pedagogical server](https://wikimpri.dptinfo.ens-cachan.fr/doku.php?id=cours:cours2):

- Logic and models of computation
- Programming languages
- Algorithms and complexity
- Proof theory and automated verification
- Data science
How to choose a course at MPRI (1/2)

• Make a diverse but **coherent** choice, before **September 30th**
  
• ... totalling \( \geq 30 \text{ ECTS} \) — aim for a bit more, say 33 or 36
  
• ... with \( \geq 18 \text{ ECTS} \) from MPRI level 2 courses — \( \geq 24 \) in order to be ranked (→ PhD grants)
  
• put them on the pedagogical server

• Other courses taken from other masters + MPRI level 1 courses (M1)
  Coherence, **not redundancy**

• **Approval required** (by JGL)
How to choose a course at MPRI (2/2)

- Make a diverse but **coherent** choice
  Choose a **main theme**, and secondary courses

- Other courses can be taken from other masters + MPRI level 1 courses (M1)
  Coherence, **not redundancy**

- Try the courses for the first two weeks

- Keep some time to work by yourselves
  you will need it

- Check evaluations of former students
  and fill one at the end of the course
Validation, ranking

- **Validation**: exams ≥30 ECTS + internship
- **Ranking** (for PhD funding programs): ≥24 ECTS from MPRI level 2 (M2) courses (only!)
  - **marking** algorithm:
    - sort courses in descending order of marks:
      - mark(course1) ≥ mark(course2) ≥ ...
    - take into account mark(course1), mark(course2), ..., mark(coursek)
      - where k is first number such that
        - ECTS(course1) + ECTS(course2) + ... + ECTS(coursek) ≥ 30
    - ignore courses with lower marks
  - if between 24 and 30 ECTS, just take all grades into account
  - **Note**: leaving a course may help you obtain higher marks, but increases risk of failing the masters
Choosing an internship

• Valid **whatever** masters program you choose

• Start looking for an internship as **early** as you can, typically November

• Meet several potential advisers, e.g., after class — at least 3

• Announces on **pedagogical server** / from other institutions / advice from friends / teachers / etc.

• Ask JGL—I may help

• Do not just ask about scientific matters, but also:
  — availability of adviser
  — possibility of continuing with a PhD (including possibility of funding)
  — work environment (meet the rest of team, PhD, postdocs)
Approval of internship

- December: send choice of internship to JGL, with rationale
- January: approval by JGL, after discussion. Main constraints:
  - Topic is precise enough
  - Adviser is scientifically acceptable
  - Time period matches
  - At most 1 MPRI M2 student per adviser in any given year
  - At most 3 ENS Paris-Saclay students per lab in any given year
  - Internship agreement (convention de stage): see with ENS Paris-Saclay, needed for Diplôme
During the internship

• Track early **signs of failure**
  Beware of everlasting « does not quite work yet but should be OK in a few days » syndrome

• **Talk** to your colleagues, tutors, teachers, PhD students, postdocs

• **Tell** JGL about your problems — earlier is better

• Every problem has a solution,
  no matter how intricate it seems to be
Writing up your report and defending

- Explore the **state of the art**
- Make a clear claim what your **contribution** is
- Do not overestimate the reader
  Clear and precise definitions; no obscure notation; every choice is motivated; etc.

  *At school, the teacher knew more than you; now you know more, and you must explain*

- **Motivate** your work
  Choices made in the report are **your own**, not your adviser’s

- Step back, get the **big picture**, and explain it

- Do not try to be exhaustive (exhausting?), concentrate on the **important / novel** points and stress their importance / novelty
Fourth year students: prepare for your PhD

• For ENS Paris-Saclay students: apply to **CDSN** fellowships
  [http://dpted.ens-paris-saclay.fr/version-francaise/financement-de-these/contrats-specifiques-pour-normaliens/](http://dpted.ens-paris-saclay.fr/version-francaise/financement-de-these/contrats-specifiques-pour-normaliens/)

• For ENS Paris-Saclay « normaliens étudiants »: **PhD track**
  open to 3rd and 4th year students of the Diplôme de l’ENS Paris-Saclay
  [https://ens-paris-saclay.fr/sites/default/files/2021-02/CS%202020-12-04%20-%20point%206%20Reglement_PhD%20track_4.pdf](https://ens-paris-saclay.fr/sites/default/files/2021-02/CS%202020-12-04%20-%20point%206%20Reglement_PhD%20track_4.pdf)

• **Graduate School CS** (Computer Science) of Université Paris-Saclay

• Paris-Saclay is not the center of the world: apply **elsewhere**
  ... elsewhere in France, in Europe, or outside Europe
Third year students: prepare for your fourth year

• Three possibilities

• Want to explore another discipline? (mathematics, linguistics, biology, physics, etc.) First define your **scientific project**

• **Agrégation**: agrégation d’informatique just created préparations at Université de Paris, ENS Rennes, ENS Lyon quite probably at ENS Paris-Saclay starting in 2022-23

• **ARPE**: outside France, **not** your future PhD lab
Look into the future

- The M2 year will usually define what you will do during a PhD
- Your PhD years will usually define what you will do during your whole career
- What do you want to work on during your future career?
- **Now** is the time to think about it.