

Master Data AI: Welcome and Introduction

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Overview

DataAI Team

Choosing and Validating Courses

Getting an M2 in Data AI

Getting an M1 in Data AI

Assistance

DataAI schedule

DataAI M1 Example Schedule

How to succeed in DataAI

The most important tools

If you have a question regarding Data AI in general

- Go to <https://dataai.telecom-paris.fr>,
- If you can't find the answer there :
 - contact the coordinators master-dataai@ip-paris.fr if it relates to a pedagogical choice (e.g. *is it allowed to do X?*)
 - contact the administrator if it relates to a problem with the administration (Synapses, badges, etc.)
 - when in doubt, you can put everyone in cc

If you have a question regarding a course

- Go to course webpage (synapses or moodle)!
- Ask the teacher

In all cases, start by looking for the answer by yourself!

Table of Contents

DataAI Team

Choosing and Validating Courses

Getting an M2 in Data AI

Getting an M1 in Data AI

Assistance

DataAI schedule

DataAI M1 Example Schedule

How to succeed in DataAI

Coordinators



Mehwish Alam

Louis Jachiet



Administrators

Danielle Deloy



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Table of Contents

DataAI Team

Choosing and Validating Courses

Getting an M2 in Data AI

Getting an M1 in Data AI

Assistance

DataAI schedule

DataAI M1 Example Schedule

How to succeed in DataAI

Choosing Your Courses

Try to be coherent: For M1, start with basic courses.

- Make a first selection and check compatibilities between classes
- Fill in the web form; saving it checks for alerts.
- Submit schedule by Friday, September 13 evening (deadline might change, check your mails).

Choosing Your Courses

Try to be coherent: For M1, start with basic courses.

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- **DEMO**

Validating a Course

- A 24h course = 2.5 ECTS (most Data AI courses).
- A X course = 5 ECTS (more ECTS but also more work).
- A course is validated when grade ≥ 10 out of 20.
- Exams can be hard.
- Failed exam can **SOMETIMES** be retaken in 2nd session.
- **DON'T CHEAT**
 - sanctions are severe,
 - plagiarizing is cheating,
 - if you're desperate, come and see us rather than cheat.

APM_5AI17_TP

- APM means APplied Mathematics, most courses will be APM or CSC (for Computer Science)
- 5AI17 is the internal code of the course
- TP stands for the school where the course is hosted administratively (TP = Télécom Paris, EP = École Polytechnique, etc.)

Table of Contents

DataAI Team

Choosing and Validating Courses

Getting an M2 in Data AI

Getting an M1 in Data AI

Assistance

DataAI schedule

DataAI M1 Example Schedule

How to succeed in DataAI

Getting an M2 in Data AI

- 30 ECTS in courses (12 courses), with 25 ECTS from Data AI and 5 ECTS chosen freely
- Validate the course requirements
 - at least one course from each mandatory groups (except those already taken in M1, or validated elsewhere and confirmed as such by the coordinators)
- Master's internship (Master's thesis) = 30 ECTS, between Feb. and Sept.
- Any course with a grade of 7 or below means **failure of the master year.**

Mandatory Course Groups

One from each group, no overlapping topics (see course descriptions).

- Group Machine Learning

Machine Learning: Shallow & Deep Learning
Machine & Deep Learning Introduction
Can be replaced with more advanced courses.

- Group Logics

Logics and Symbolic AI
Logic & Knowledge representation

- Group Databases

Database management systems
Databases

- Group Big Data Systems

Systems for Big Data
Architectures for Big Data
Big data infrastructures

- Group Softskills

Softskills seminar

- Group Ethics

AI Ethics

M1/M2 Internships

- Internship in a research lab (very much encouraged) or in a company (discouraged)
- DataAI will post some internship offers on the website. Télécom Paris organizes internship forums. IP Paris will organize an "internship day".
- Internship advisor supervises the student at host institution
- Scientific advisor (lecturer of the Data AI) mediates in case of disagreement between the student and the internship advisor
- Written report, oral defense, both in English
- Validated if the grade is at least 10/20.

M1/M2 Internships – What To Do Beforehand

1. Fill out the form in the Synapses system (fill in all fields)
2. Send the internship offer by email to the DataAI coordinators for approval
3. Signal scientific advisor to DataAI administrator
4. Fill out the internship agreement (“CONVENTION DE STAGE”)
5. Print 6 (!) copies of the internship agreement and give them to DataAI administrator for signature

M1/M2 Internships – What To Do At the End

1. Send report to scientific advisor 1 week before the defense
2. Defense: 20 minutes presentation, then questions by the advisors
 - no more than 3 weeks before and 1 month after the end of the internship; during the current year of study
 - takes place at the reference institute (Télécom Paris) or at the institute of the scientific advisor
 - attended by scientific advisor and internship advisor if possible
3. Internship is graded by the scientific advisor in coordination with the internship advisor: quality of the work, the report, and the defense

M1 Internships – Specifics

- 2–4 months
- to be completed and defended by the 15th of August
- Report 20 pages, oral defense, both in English

M2 Internships – Specifics

- 5–6 months, starting between Feb. and May.
- to be completed by the 1st of October.
- Report 30-60 pages, oral defense, both in English

Table of Contents

DataAI Team

Choosing and Validating Courses

Getting an M2 in Data AI

Getting an M1 in Data AI

Assistance

DataAI schedule

DataAI M1 Example Schedule

How to succeed in DataAI

Getting an M1 in Data AI

During the M1 year, a student **can** validate:

- up to three research projects awarded 5 ECTS each
- a 2 to 4 months internship (5 ECTS / month)
- 10 ECTS outside of DATA AI courses with at most 5 ECTS in non-math/CS topics
- a certain number of DATA AI courses.

To validate the M1 year, a student **must** validate

- between 15 and 30 ECTS in research projects or internships,
- a total of 60 ECTS.

As for M2, any course with a grade of 7 or below means **failure of the master year**.

Remember to take some courses from mandatory course groups (required for M2)!

M1 Research Projects

- Research projects suppose ~ 10 full days of work scattered throughout a semester
- Requires finding an advisor & approval by Data AI team.
 - both projects can have the same adviser
 - second project approved only after first one is finished
- We will provide a list of research projects topics, but you can also propose your own.
 - re-implementing well known techniques, benchmarking different approaches, reading articles, writing code or ideas, making experiments, etc.
- Report: write a short document summarizing your contribution.

Table of Contents

DataAI Team

Choosing and Validating Courses

Getting an M2 in Data AI

Getting an M1 in Data AI

Assistance

DataAI schedule

DataAI M1 Example Schedule

How to succeed in DataAI

Studying in a different country, a different language, in a different culture, and a different education system can be daunting.

Some resources to help you

- Psychologist of IP Paris : `sylvie-coussot@ip-paris.fr`,
- Student helpline : `vie-etudiante@ip-paris.fr`

Sexist and Sexual Violence

Definition

- Any sexual act, attempted sexual act, comment or advance of a sexual nature directed at a person **without their consent**.
- This violence can take various forms: sexist comments, insistent invitations, touching and caressing of a sexual nature, sexual harassment, exhibitionism, blackmail, threats, use of force which can take the form of a stolen kiss or even rape, sexist or homophobic insults.

Legal

- French law penalises all form of sexist and sexual violence.
- This includes harassment, verbal and online.
- Intoxication, of the aggressor or of the victim, makes it a *more serious crime*.

Resources

- **IP Paris helpline:** cellule.ecoute@ip-paris.fr
- Free hotline: 3919 (also in English)
- Essonne Centre for Information on Women's' and Family Rights (CIDFF 91) : 01 60 79 42 26.
- Femmes solidarité 91 : 01 70 58 93 30.
- SOS homophobie : 01 48 06 42 41, sos-homophobie.org
- In case of emergency, you can call the or the European emergency number 112. This number works for the police and other emergencies and they speak various languages.

Table of Contents

DataAI Team

Choosing and Validating Courses

Getting an M2 in Data AI

Getting an M1 in Data AI

Assistance

DataAI schedule

DataAI M1 Example Schedule

How to succeed in DataAI

DataAI Basics Week, 2-6 Sept.

	Monday	Tuesday	Wednesday	Thursday	Friday
morning	Data AI welcome meeting at 10:00		Formal Languages Fabian Suchanek at 9:00		Introduction to NLP Nils Holzenberger at 8:30
13:30 – 16:45	Computer & Program- ming Louis Jachiet	Logic Jean-Louis Dessalles			

Vacations and days off

- 02/09 start of the year
- 27/10 to 03/11 vacation
- 11/11 day off
- 23/12 to 05/01 vacation
- 24/02 to 02/03 vacation
- 19/04 to 27/04 vacation

Main schedule

- 11/09 to 07/11 Period 1
- 08/11 to 13/02 Period 2
- 14/02 to 27/04 Period 3
- 29/04 to 30/06 Period 4

X schedule

- September - December Period 1
- January - March Period 2
- April - August Period 3

Dates to have in mind

M2 internships

- Starting September, select courses according to what you want to do
- In November or December, start contacting people
- End of February, start of the internship
- End of April, very last date to start your internship

M1 internships

- Starting September, select courses to explore topics
- In November or December, start contacting people
- End of March, start of the internship
- Before mid August the internship should be defended!

PhD

There are different ways of financing your PhD but you should discuss the PhD topic *before starting* the M2 internship! And it is strongly advised to do your internship where you would like to do your PhD...

Table of Contents

DataAI Team

Choosing and Validating Courses

Getting an M2 in Data AI

Getting an M1 in Data AI

Assistance

DataAI schedule

DataAI M1 Example Schedule

How to succeed in DataAI

Example M1 Schedule, Period 1 (12.5 ECTS)

	Monday	Tuesday	Wednesday	Thursday	Friday
AM		CSC_5DA01_TP Machine Learning	APM_5AI01_TP Logics and Symbolic AI		CSC_51052_EP Data Visualization
PM					CSC_4SD02_TP Databases

And start a language course (2.5 ECTS)

Example M1 Schedule, Period 2 (15 ECTS)

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	CSC_5DA07_TP Collective Intelligence	APM_5AI18_TP Reinforcement Learning	APM_5DA03_TP Image mining and content-based retrieval		CSC_51052_EP Data Visualization
PM		HSS_5DA06_TP AI ethics			CSC_5DA09_TP Knowledge Base Construction

Example M1 Schedule, Period 3 (15 ECTS)

	Monday	Tuesday	Wednesday	Thursday	Friday
AM		MAP_67OI_TP Machine Learning with Graphs	APM_5DA13_TP Representation Learning for Computer Vision and Medical Imaging		
PM		APM_4EL20_TP Neuro-Symbolic Artificial Intelligence	APM_5AI27_TP Sequence-to-Sequence Models for NLP and Speech Processing		

And a 5-ECTS project

4 months internship (20 ECTS)

You can fill your free-CS ECTS from CS courses at IP Paris. Some examples that you can find in Synapses of **Télécom** (confirm with teacher whether they are in English):

- 2A Track "Traitement du signal pour l'intelligence" (TSIA)
 - Statistics: linear models
 - Advanced Statistics
 - Machine Learning
 - Optimization for Machine Learning
 - Machine Learning for Text Mining

You can fill your free-CS ECTS from CS courses at IP Paris. Some examples that you can find in Synapses of **Télécom** (confirm with teacher whether they are in English):

- Programming contest training
- Introduction to Deep Learning with Python part 1
- Introduction to Deep Learning with Python part 2

You can fill your free-CS ECTS from CS courses at IP Paris. Some examples that you can find in Moodle of **Polytechnique** (confirm with teacher whether they are in English):

- Computer Vision
- Softs Robots : Stimulation, Fabrication and Control
- Reinforcement Learning (math-heavy)

Free-non-CS ECTS

You can fill your free-non-CS ECTS from courses at IP Paris that are not related to CS. Some examples that you can find in Synapses of **Télécom** (confirm with teacher whether they are in English):

- Economics
- Internet and Society
- for more, go to "Catalogue 2024-2025", then in the menu on the left select "Anglais" under "Langue d'enseignement" (93 courses)
- language courses (FEL)

Table of Contents

DataAI Team

Choosing and Validating Courses

Getting an M2 in Data AI

Getting an M1 in Data AI

Assistance

DataAI schedule

DataAI M1 Example Schedule

How to succeed in DataAI

Be adults

- Organize yourself, *e.g.* use a calendar for courses and assignments
- Work regularly, *i.e.* go over the courses when at home
- Don't wait the deadline to submit assignments

How to navigate Data AI

Be adults

- Organize yourself, *e.g.* use a calendar for courses and assignments
- Work regularly, *i.e.* go over the courses when at home
- Don't wait the deadline to submit assignments

but don't forget to be humans

- Create social connections, *e.g.* participate in students activities
- Enjoy the life on the plateau, *e.g.* hiking, trip to Paris, etc.
- Maintain good health habits (sleep, exercise, etc.)