MSc.
Data Science & Intelligence Artificial

Michel.RIVEILL@univ-cotedazur.fr

Short presentation

- Who has just completed the second year ?

- Who has just completed the first year and pass in the second year ?

- Who is coming for the second year ?

- Who is coming for the first year ?

Administrative question

- Alexiane, the MSc assistant for the last year, has left us
  - We hope to have a new assistant soon (before October)

- For all admission questions, you can contact
  - MIO office (near welcome desk) at the entrance of the building
  - If you send a message to Nelia.GHIRONI@univ-cotedazur.fr put msc@univ-cotedazur.fr in copy
    - and eventually me

- Registration to Social Security
  - It is mandatory for you to have your health expenses covered during your studies.
  - https://etudiant-etranger.ameli.fr/

  - **In addition, you can subscribe to a complementary health insurance or a mutual insurance.**

COVID rules

- The mask is mandatory on campus and in the buildings.

- Wherever possible, we keep the same place in the classroom.

- If you have pathological signs similar to those of COVID-19 do not hesitate to be tested.

- If you have tested positive for COVID-19
  - Stay at home and infor MIO and me

- If you have been identified as having been in contact with a patient with COVID-19
  - You are vaccinated; go to lecture
  - You are not vaccinated: stay at home

Lectures and study ROOMs

- You have:
  - 1 lecture room for the M1 year: 348 (code 8732)
  - 1 lecture room for the M2 year: 281 (code 1988)
  - 1 common room for break: 346 (code 8732)

  - Do not lose the keys, put them in the box provided for this purpose.

- Take care of them, they are reserved for you
  - as far as possible stay in the same place

First year

Agenda

- S1a – Refresher
  - From week 37 to 39
- S1b – Lectures One
  - From week 39 to 50
- **Xmas break: weeks 51, 52, 1**

Semester 1

- S2a – Lectures two
  - From week 2 to 13
  - No lecture week 9
- S2b – Internship
  - Between week 14 to 35
  - Evaluation week 35
  - Almost 15 weeks

Semester 2

S1 – Semester One – 30 ECTS

- Refresher – 5 ECTS
  - Basic Probability
  - Basic Algebra for Data Analysis
  - Basic Algorithmics
  - Basic tools for System Management
  - Methods and tools for technical and scientific writing

- Statistics – 6 ECTS
  - Statistical inference theory
  - Statistical inference practice

- Data Mining – 9 ECTS
  - A general introduction to Machine Learning
  - Processing large datasets with R
  - Technologies for Big Data with Python

- Data visualization and management – 8 ECTS
  - Security and ethical aspects of data
  - Distributed Big Data Systems
  - Data visualization

- Workshops and vulgarization – 2 ECTS

In order to validate the semester:
you have to validate each teaching unit

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S2 – Semester two – 30 ECTS

- Statistical learning – 9 ECTS
  - Statistical learning theory
  - Model selection and resampling methods
  - Optimization for Data Science

- Machine Learning – 9 ECTS
  - Machine learning algorithms
  - Introduction to deep learning
  - Web of Data

- Personnal work– 12 ECTS
  - Cases Studies
  - Intership

- In order to validate the semester: you have to validate each teaching unit

- In order to validate the year: you have to validate each semester

Second year

Agenda

- Semester 3 – Lectures
  - From week 39 to 8
  - Xmas break, weeks 50, 51, 52 (except for lecture shared with other master see agenda)

  - Evaluation week 9 and 10

  - In order to validate the semester: you have to validate each teaching unit

- Semester 4 – Internship
  - From week 11 to 37
  - Evaluation week 35
  - Internship almost 20 weeks

- In order to validate the year: you have to validate each semester

S2 – Semester two – 30 ECTS

- MANDATORY – 12 ECTS
  - Bayesian Learning
  - Advanced Deep Learning
  - Introduction to Information Theory
  - Model-based statistical learning

- ADVANCED MACHINE LEARNING - 9 ECTS
  - Research Project
  - 1 of the following courses
    - Stochastic models in neurocognition and their statistical inference
    - Reasoning and decision making

- ADVANCED METHODS IN AI – 9 ECTS
  - 3 of the following courses
    - Advanced Learning: functional, mixed and text data
    - Foundation of geometric methods in data analysis
    - Inverse problems in image processing
    - Deep Learning for computer vision

In order to validate the semester
you have to validate each teaching unit

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Research project

- Goal
  - The project is an opportunity to develop their organizational skills and autonomy.
  - The subjects of research projects are deliberately complicated, and require, on the one hand, the mobilization of the skills acquired during the Master cycle and, on the other hand, the search for new knowledge.
  - The work carried out must be able to position itself in relation to existing work, whether in relation to a scientific state of the art or to a comparative study of similar tools/solutions.

- Agenda
  - Before 30 of september → choose a subject
    - you must discuss with the researcher who proposed the topic. If he agrees to take you, tell him to send me a message.
    - When it is chosen, send me an e-mail
  - October-November
    - State of the art period → document for the 30 of novembre, 5-8 pages, LNCS format
  - December-January
    - Proposal period → document for the 15 of February, 8-12 pages, LNCS format
  - Last week of February → oral presentation

Research project

- Your reports, like all scientific papers, must be understandable to people working in the field.

- To achieve this goal, your draft reports will be reviewed by your colleague and doctoral students who will give you feedback so that you can improve them.

→Between 1 to 10 December for the state-of-art report

→No feed back for the final reports

→Lncs style: https://www.springer.com/gp/computer-science/lncs/conference-proceedings-guidelines

→Final Grade = Evaluation by the person who proposed the topic + Final report + Oral presentation
  - → No grade for intermediate report, just an opportunity to improve it

Internship

- Agenda
  - First report : 30 of may (5 pages → just the work description)
  - Oral evaluation : last week of august
  - Final report : 15 of august
  - Grade : 2*work director + 2*oral presentation + 1*final report
- The internship can be done in France or abroad and must be related to what is taught in the MSc. DSAI.
  - In France, an internship necessarily gives rise to a remuneration of about 500 euros minimum per month.

- It is your responsibility to check that the internship corresponds to what you want to do but also to highlight elements of the MSc.
  - If you do an internship purely in computer science, you will necessarily be penalized..

Some others remark

Communication canal

- All communication takes place via slack
    - 1 channel per lecture
    - 1 global channel for all M1 students and another for M2 students
    - 1 global channel for internships

- Except for the 2 M2 courses managed by another MSc.
    - Stochastic models in neurocognition and their statistical inference
    - Reasoning and decision making

- Schedules are here:
    - M1: https://calendar.google.com/calendar/u/0?cid=ZmU0cnM3c3NmMHRtMjllcWRsOTZpNjk2MmNAZ3JvdXAuY2FsZW5kYXIuZ29vZ2xlLmNvbQ
    - M2: https://calendar.google.com/calendar/u/0?cid=c2Y0c2liaGx0YjBvcjhjODUxOTg4OXBxNWdAZ3JvdXAuY2FsZW5kYXIuZ29vZ2xlLmNvbQ

5 types of plagiarism to avoid
https://learn.g2.com/plagiarism

1. Missing quotation marks and author attribution
2. Buying a paper from an essay-writing website
3. Turning in someone else's work as your own
4. Having somebody rewrite sections of your paper
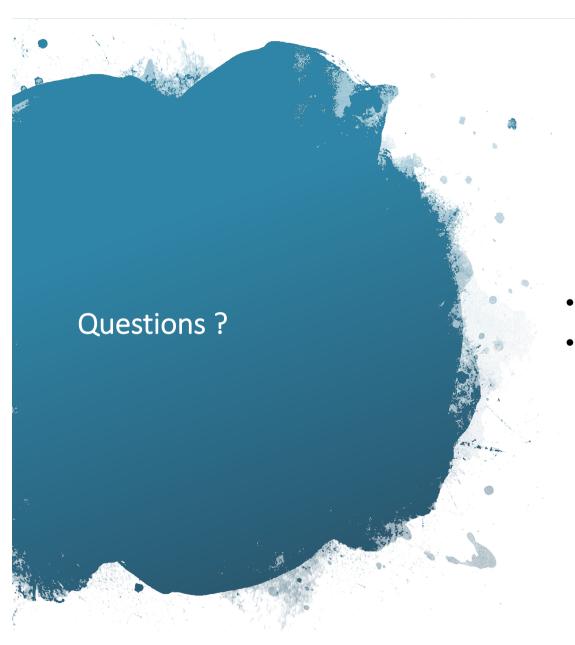5. Using old work you previously wrote as "repurposed" content

We use a software in order to detect plagiarism

Courses

- Attendance at classes is mandatory
  - Nevertheless, in case of illness or if the University management requires it, you must stay at home.
  - it is also the case for some students who have not yet obtained their visa.

- For the September month, for foreign student, only if requested, the courses can then be followed at a distance
  - Panopto / Zoom / BBB synchronously (via streaming) or recorded
  - The materials or activities can be disseminated through GitHub, Moodle (lms.univ-cotedazur.fr) or Slack

- It is the Professor of the course who chooses how to proceed.

Questions ?

- Copy of the slide are sended to slack
- #general