

# Infos on BSc + MSc thesis

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## OVERVIEW

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The purpose of this document is to communicate what we as a lab expect from you as a student working on your bachelor's or master's thesis in our lab.

It is generally a good idea to think about the thesis early on. So even if it feels very far away at the moment, please have a look. Other labs may follow similar or quite different approaches.

## BEFORE YOUR THESIS

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**Thesis work will be a full-time job. Therefore, the following points are important to consider before starting your thesis:**

- You should have finished your coursework before starting your thesis work (exception: our journal club, M.Inf.2242; see below)
- Many degrees (computer science, data science, physics) have preparatory practical modules prior to the thesis. If you're interested in doing your thesis with us, please use these modules to get familiar with our lab and the broad topic area of your thesis.
- Plan and clearly communicate to us a starting date. Consider this date equally binding and reliable as the starting date on your work contract after your studies.
- During your thesis work, you're an active member of the lab for the entire time of your thesis. Any other obligations (e.g. work, volunteering, travel) you have during this time should be clearly communicated and discussed beforehand.
- We expect you to register your thesis within a month of joining the lab. This is primarily for your protection to avoid scope creep, as your supervisor will always have new ideas what can be done on top.

**Required courses (both required):**

- B.Inf.1236 Machine Learning (summer term)
- B.Inf.1237 Deep Learning for Computer Vision (winter term)

**Recommended courses (selection):**

- M.Inf.2241: Current Topics in Machine Learning (seminar)
- M.Inf.2541: Current Topics in Computational Neuroscience (seminar)
- M.Inf.2242: Journal Club Machine Learning and Computational Neuroscience (can be done in parallel to master's thesis)

- M.Inf.2201: Probabilistic Machine Learning
- B.Inf.1240: Visualization

**Generally, we recommend choosing the computational neuroscience / data science / machine learning specializations, depending on your degree program:**

- BSc+MSc Applied Computer Science: Neuroinformatics or Data Science
- MSc Applied Data Science: Computational Neuroscience
- MSc Mathematics: Mathematical Data Science
- BSc Mathematical Data Science: Machine Learning
- MSc Physics: Biophysics and Physics of Complex Systems

## DURING YOUR THESIS WORK

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**How we work and how you are integrated into the team:**

- You're part of the team like everybody else. Treat everyone from students to professor as colleagues. Feel free to ask for advice, offer help, have a chat over coffee, join for lunch etc.
- Thesis work is full-time work. We offer you a workplace with a desk, monitor etc., and we expect you to be around like everyone else. This means:
  - The default is that we work on our desk in the office most of the time.
  - Work hours are flexible. No need to be around 9am – 5pm or anything the like. A good rule of thumb is that everyone is usually in the office around lunchtime.
  - Work from home is ok one day a week or for a full week every once in a while.
  - Coming late or leaving early for doctor's appointments, when expecting craftsmen or mail etc. is totally fine.
- We expect you to be around for the weekly lab meetings (on Mondays 12:45–14:00 in 2.122); you'll be presenting twice in these meetings (see below).
- You're welcome to join our journal club (on Thursdays 13–14), but it's not mandatory. As a master's student in computer science and data science you can get 5C (module M.Inf.2242) if you participate regularly present a paper two times.

**Supervision:**

- You will have a primary supervisor, usually a PhD student or postdoc, with whom you should discuss all aspects of your project on a regular basis (at least weekly).
- Your primary supervisor will guide you through the onboarding process (getting keys, workplace, high-performance computing account, meeting schedule etc.)
- Alex is happy to be involved in your project, open to conceptual discussions at any point in time, and happy about project updates on a 4–6 week basis.

**Important milestones:**

- Research proposal (after 4–6 weeks): During the first weeks of your thesis work, you prepare a research proposal that provides the background, discusses related work, specifies the objectives of the work and outlines the work plan. You submit a written version of your research proposal and present it in a short 15 min presentation in the lab meeting.
- Final presentation (around submission of thesis): You will present the results of your thesis work in a presentation (ca. 30 min) in the lab meeting.