Teaching Statement

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My teaching experience includes being a teaching assistant for university courses at late Bachelor's and Master's level across multiple institutions. Additionally, I have supervised and acted as an examiner for multiple Bachelor's and Master's projects. I have the benefit of having experienced different teaching philosophies both across universities and in multiple countries (the US and Denmark), and bring this perspective to my teaching. Additionally, I have formal education on pedagogy focusing on active learning and constructivist theory of education (Introduction to University Pedagogy at University of Copenhagen: `https://www.ind.ku.dk/english/course_overview/iup/`).

My philosophy is that students learn best through active engagement via participation during teaching sessions to develop interest, curiosity, and understanding of theory, with hands-on practical work in the form of relevant exercises and, most importantly, one or more long term projects throughout the course period. I see the best way to engage students is to bring out their understanding by guiding them with questions in order to prompt them to discover answers and processes towards reaching those answers on their own. Similarly with supervision, I see the most practical and useful method is to give students the resources they need in order to develop insight on their own. I see this as most rewarding to the students themselves, while instilling a deeper knowledge of the material. In what follows I describe in more details my teaching experiences and philosophy, followed by my mentorship experiences and philosophy.

Reflections on Teaching

At the University of Copenhagen (UCPH) in Denmark I have been a teaching assistant for the Web Science course, a course on recommender systems and data science with web data, as well as twice for the Natural Language Processing course. These courses enrolled between 40–50 students each. My responsibilities were to develop teaching material for dedicated lab sessions, disseminate this material during the lab sessions, co-design the course projects, co-write the course final exams, assist students during the lab sessions in understanding the material needed for the course projects and exam, and grade the final projects and exams. My duties were highly complementary to the course instructors: whereas the instructors disseminated primarily the theory, my job was to disseminate the practical application of the theory. As I have been TA for the NLP course twice, and the field of NLP is constantly changing, the materials we developed for the lab sessions (generally in the form of code examples and notebooks) were updated each year to align with latest practices. Some of the lab material that we developed can be found here: `https://github.com/copenlu/stat-nlp-book/tree/master/labs/notebooks_2020_2021`. Additionally, I was a teaching assistant at the University of California San Diego for the course Principles of AI: Probabilistic Reasoning and Decision Making, where my main responsibilities were to hold office hours to help students with assignments and grade those assignments.

Stemming from both the course I took in pedagogy and my own personal experience, I try to use active and dialogical learning in order to engage students during course sessions. This is in the form of facilitating discussions between students on presented material, developing polls and quizzes to go in tandem with lectures, and encouraging students to answer questions during class. I have seen that activating students in this way helps to engage their focus during course sessions and to think more deeply about the material, which in turn helps them retain more information. As such, my teaching style is practical and hands on, with a focus on engaging students to the greatest extent possible.

Being a TA for these courses gave me practical experience in how to teach highly diverse sets of students. The students taking these courses were often from disparate programs, including computer science, data

science, and IT and cognition, as well as disparate personal backgrounds, as the communities at these universities are highly international. Bridging these gaps and meeting students where they are in order to best teach the material is in my view one of the most personally rewarding and instructive aspects of teaching. The feedback I have received from students in these courses has generally been positive, including that "...TA's have been quite engaging and helpful" and "the office hours with the TAs were really helpful since there was enough time to get specific coding help."

List of Teaching Experience

- *Teaching Assistant, Introduction to Natural Language Processing* University of Copenhagen, Fall 2021

- *Introduction to University Pedagogy* University of Copenhagen (Course), Spring 2021

- *Teaching Assistant, Introduction to Natural Language Processing* University of Copenhagen, Fall 2020

- *Teaching Assistant, Web Science* University of Copenhagen, Spring 2020

- *Teaching Assistant, Principles of AI: Probabilistic Reasoning and Decision Making* UC San Diego, Fall 2017

Reflections on Supervision

I have been a primary supervisor or co-supervisor for two Bachelor's projects and one Master's project. My philosophy on supervision is to treat each project as an equal collaboration to the greatest extent possible. In this, we are all working towards a common goal of gaining deeper understanding of and solving problems, and my role is to help facilitate this process. As with teaching courses, I try to draw out insight from students by demonstrating how to ask relevant questions related to the problem at hand, and suggesting paths to finding solutions.

The projects I have supervised have covered a variety of technical areas including applications of natural language processing, data science, and machine learning efficiency. The students have also come with very different background knowledge and interests, so I have learned to adapt my supervision style to the particular needs of each student. Some students take an interest in one aspect of a problem or another, or prefer to work at a more theoretical or a more practical level. I see the job of the supervisor as offering background knowledge and experience to help students realize their projects as they desire, while steering them away from unpromising directions. Additionally, as the knowledge and insights gained in research projects are inherently unknown at the start, the supervisor's role is to participate in this process of discovery to the greatest degree possible.

For example, when advising the bachelor's student project *Compression Methods for Efficient Vision Transformers* (Olga Henrietta Ptacek, Feb 2023), Olga was highly motivated and technically skilled from the beginning, so the main function of my supervision came in the form of guiding her through the particular topic (neural network compression via tensor decomposition) and how to successfully carry out a research project. The work was highly collaborative, where I helped guide her through developing the direction and devising the experiments, and she found for herself how to carry out the project in practice. This allowed her to both gain a deep understanding of the topic of tensor decomposition and learn at a general level how to carry out scientific research. This was also realized in the more human side of doing research; for example the particular method of tensor decomposition we were testing, to our surprise, did not yield the results we were expecting based on previous literature, which was disappointing. My role then was to reassure her, help her gain insight as to why this was the case on our particular problem, and brainstorm together new directions which were ultimately more fruitful.

List of Projects Supervised

- *Factual Text Generation.* PhD student co-advisor, UCPH, from Oct 2024
  Zain Muhammad Mujahid

- *Compression Methods for Efficient Vision Transformers.* Bachelor's project advisor, UCPH, Feb 2023
  Olga Henrietta Ptacek

- *Uncertainty and Exaggerations of Scientific Findings in Social Media.* Master's project advisor, UCPH, June 2022
  Jimmie Jin, Asger Thorleif Knudsen, Sylvester Leonhard Gorm Errebo Lee

- *Stance Detection of Attitudes Toward Climate Change on Social Media* Bachelor's project advisor, UCPH, June 2020
  Jimmie Jin, Asger Thorleif Knudsen, Sylvester Leonhard Gorm Errebo Lee