Teaching Statement

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I would like to pursue a career in academia to altruistically transfer my knowledge and experiences to young students, provide personalized supports to students at all levels, teach them skills according to their career goals, and most importantly help them consistently seek their values in and out of class as a lifelong learner. My motivation for this goal comes not only from my passion for research but also from the rewarding experiences with my mentors in my academic development. These experiences have positively shaped my teaching philosophy. Specifically, I summarize my core philosophies as follows.

Personalized Learning: Given that students have a variety of backgrounds, learning styles, skill sets, and motivations, I believe that personalized instructions in teaching and mentoring can help to serve students for their needs effectively.

Collaborative Learning: I also believe that sharing knowledge and opinions among a group of students improves their learning efficiency, and thus I attempt to spend time on promoting group projects in class, as well as connecting students with similar research interests for collaboration.

Lifelong Learning: Finally, I believe that the purpose of education is not to simply teach students to pass in-class exams, but to teach them the way to acquire new knowledge in their future career. Therefore, I have been actively engaging in several mentoring activities to share my experiences to young students, and help to get their foot in the door for their future research.

1. Mentoring Experience

During my time in mentoring students, I make my best endeavors to **personalize** my mentoring style to suit their needs, and inspire them the ways to **conduct new research projects** on their next journey. Specifically, I have been fortunate to advise 1 high-school and 4 graduate students on various research projects at CMU. For example, one of my mentees planned to apply for a Ph.D. program, but she had no research publications before her Master's study at CMU. I guided her through the procedures of defining a problem, proposing new ideas, conducting experiments, and writing a paper. At first, she has been working with me on robust neural models, which resulted in a second-author paper at ACL 2019. Later I was proud to see her from initially taking my lead to eventually directing her research on cross-lingual NLP for her papers at ACL. She is now continuing her Ph.D. research on NLP at Princeton. In contrast, another Master's student with prior research experiences also planned to pursue his Ph.D. study. I mainly motivated him based on his research interests at a higher level and inspired him to think deeply about intuition when designing models. Finally, I have co-authored with him four papers at top NLP conferences. Recently, he transitioned to USC for his Ph.D. research on NLP. In addition, I am now mentoring a high-school African student on an on-going research project for low-resourced African languages. Since this summer, we have been working on improving the machine translation performance between English and African languages such as Xhosa. During our interaction on Slack and 1-1 weekly meeting, I have provided my hands-on supports to him by sharing my code base, and demonstrating how to collect text data and train multilingual models on top of my implementation. With these experiences, I keep improving my mentoring skills and put my teaching philosophy into practice. In the future, I will continue my efforts to support students from diverse backgrounds by my **personalized** instructions and encourage them to **acquire new knowledge** for their future development.

2. Teaching Experience

I advocate **collaborative learning** and **personalized instructions** in teaching. For example, I served as a teaching assistant for two graduate courses at CMU. One of the courses (CS11-731) is a research-

based class with a class size of around 60. I led the in-class discussion on the course projects with 5 groups of students, provided my detailed feedback during their poster presentations, and reviewed project reports in a similar way as reviewing conference papers. One of the group projects on improving low-resourced neural machine translation has resulted in a publication at ACL 2019. I also gave four guest lectures for both undergraduate and graduate students by either online or in-class teaching. At CUHK, I also served as a teaching assistant for three undergraduate courses and one graduate course. For the undergraduate courses, there are about 200 students coming from different backgrounds, including exchange students from overseas countries and students from other departments. I hold my weekly office hours to answer questions in different languages (i.e., Cantonese, Mandarin, and English), and gave the recitation classes to help students understand the related concepts. I won the department's best teaching assistant award in 2013. These experiences demonstrate several elements of my teaching philosophy. First, I put a heavy focus on **collaborative learning** by encouraging students to discuss the pros and cons of their proposed ideas critically from different aspects, distribute their workload evenly and work on a shared code repository within a group. I believe that these collaborations help students not only improve knowledge acquisition and retention but also develop self-management and leadership skills which are crucial for their future developments. Finally, I have attempted to **personalize** the recitation slides to cover the frequently asked questions that I collected during the office hours.

3. Community

I have actively worked to bring AI to a broad range of audiences, from junior researchers to the general audience who have no technical backgrounds. For example, I joined the mentoring program at the ACL 2020[1] and AACL 2020[2] student research workshops, and gave detailed advice to help junior students on polishing their papers and preparing their presentation slides. I also shared my research experiences either formally (e.g., group mentoring session at ACL 2020) or informally to many students to pursue research careers in AI. For example, one of the students resigned from his job as a consultant and decided to pursue his Ph.D. research on cross-lingual NLP at NTU after constantly consulting with me. Additionally, I have been invited twice to give my talks to promote language technology tools at the European Commission (EC) Workshops. In one of the workshops "Crisis Response-Language tools to the rescue", I am one of the seven speakers to introduce multilingual technologies to the audience including EC staff and representatives of public administrations in the Member States. These experiences have strengthened my belief in promoting the education of AI to a broader community.

4. Future Teaching Ambitions

I look forward to designing and delivering courses on **natural language processing, machine learning, deep learning, machine translation, algorithms, and structured prediction**, as well as a wide range of intro-level courses such as **data mining, information retrieval** at either undergraduate or graduate level. I am also interested in future opportunities to run research-focused seminar classes or reading groups on topics such as cross-lingual NLP, multimodal machine learning, and human-machine interaction in conjunction with other CS faculty or Linguistics faculty members. In particular, I am interested in building an interactive learning environment for students, where I can engage in small-group discussions and provide both the necessary theoretical background and hands-on practices through course projects. To sum up, in the future as I transition to a faculty role, I will follow my stated principles to provide **personalized** instructions to support students from diverse backgrounds, encourage them to learn from each other in the **collaboration**, and most importantly motivate students to actively **acquire new knowledge** out of class as a lifelong learner.

1. https://sites.google.com/view/acl20studentresearchworkshop/
2. https://aacl2020-srw.github.io/mentoring