



南京大学  
Nanjing University

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To whom it may concern,

It is my great pleasure to recommend Yan Zheng, one of the most outstanding students among my research collaborators, to apply for the “outstanding doctoral dissertations award”. I came to know Yan in the late period of his postgraduate. At first sight, I believed that this young man must have great potential in research. It proved that I was right after we got to know each other better. At that time, he was studying the reinforcement learning, and multiagent system with theoretical proof. I suggested him to build a mathematical model using weighted estimators. Our idea is to incorporate the weighted estimators into the double Q-learning algorithm. In this work, he conducted a large number of experiments and detailed analysis. To my surprise, he learned and mastered the theory of reinforcement learning and dynamic programming in a very short time and implemented the model we discussed in an efficient way. In another project, he extended the Bayesian theorem and proposed the deep BPR+ algorithms that efficiently handle the non-stationary agents in both cooperative and competitive multiagent environments. These efforts have led to two top conference papers. Moreover, he constructed robust and solid reinforcement learning benchmarks for evaluations, from which everyone in the laboratory can benefit. All these evidences demonstrated his critical thinking, deep knowledge of operating systems, good mathematical faculties and proficient computer programming skills. In addition, Yan has excellent communication skills. His written work is both clear and concise, as well as interesting to read. Through numerous conversations, I found that he was a good listener, both thoughtful and open to new perspectives. He is a young scholar, full of talent, confidence and energy. Apart from his excellence in research, he is very kind, helpful, reliable and passionate. He is always the first one that would give you a hand when you face difficulties. He is also very enterprising and responsible. When engaging in projects he is an excellent leader, under whose guidance other team members will cooperate tightly to make the projects run smoothly. To sum up, Yan Zheng is an innovative and independent researcher with great potential and enthusiasm. I firmly believe that he will be a distinctive researcher and your favorable consideration of his application will be highly appreciated.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Zongzhang Zhang'.

Zongzhang Zhang

Associate Professor

State Key Laboratory for Novel Software Technology.

Nanjing University, Nanjing, China, 210023

Email: zzzhang@nju.edu.cn