Personal Statement

Guanzhou Hu

School of Information Science and Technology

ShanghaiTech University

Solving tasks faster is always an attractive challenge for computers, as well as for me. It was in the year 2015, when *Sunway TaihuLight Super-computing Center* was built up just next to my apartment, that I first had a real glimpse of warehouse-scaled distributed computer systems, and realized the power of parallelization. That glimpse drives me to major in Computer Science in ShanghaiTech because I am eager to learn how to handle Terabytes of data efficiently with computer systems. Also, it encourages me to apply for the Ph.D. program since I want the computation itself to be meaningful, to match real applications, and to break through its own limitations.

Generally, my major research interest is about computer systems and high performance computing. More specifically, my detailed research interests span across distributed computer systems architecture, parallel computing and operating systems.

Like higher-level application research, innovative ideas are strongly needed in distributed and parallel computer systems design. Therefore new ideas are what I am expecting from the Ph.D. program. I want to have the chance to communicate with professors and students not only from the fields of system architectures but also from networks, security, data science, neural science, etc. I believe that the brilliant ideas coming from all these fields can trigger new designs of distributed computing network structures, energy-efficient system architectures and fault-tolerant computation models.

Having only the idea is never enough, and I also expect to learn how to make new system designs become reality. I hope to have the opportunity to practice building system prototypes by myself, conduct tests on them and make comprehensive evaluations. The combination of effective design and sufficient practice is the key to successful Petabyte-scale, or even the next generation Exabyte-scale, high performance computing. Pragmatic spirit is always the guideline of research to me.

I am participating in a distributed file system research as a research assistant in ShanghaiTech Lion Group. The basic skills of system programming and small-scale clusters testing that I have learned during this experience will greatly help me conduct further research. Meanwhile, I am also actively participating in competitions across the fields of mathematical modeling and artificial intelligence, since I pay great attention to inter-disciplinary study. High performance computing is application-driven, and I try to get connected with cutting-edge technologies and figure out what they really require from underlying computing resources.