

Dawei Wang — Personal Statement for MSE in Applied Mathematics and Statistics

All knowledge is, in final analysis, history.

All sciences are, in the abstract, mathematics.

All judgements are, in their rationale, statistics.

—Calyampudi Radhakrishna Rao

It is still hard for me to recall my astonishment when I first read the quotation above.

When I was a freshman, I participated in the summer social practice of investigating the hybrid power car market development, visited BYD's electric car factory, and conducted a questionnaire survey in popular tourist attractions and public places in Nanjing. In this process, I deeply felt the enormous social and economic benefits of technological innovation. Both consumers and environmental protection benefit from it. However, at that time, the news of car companies cheating government subsidies by fabricating sales of new energy vehicles frequently appeared in China, which made me very sad. I communicated with my friends in finance majors and learned that for companies listed on the stock market, the CSRC would require them to disclose information to the public regularly. Suppose more car companies raise more money through open capital markets. In that case, they can be under the public's supervision, and the development of the new energy vehicle industry may be more positive. I was impressed by the significant role of financial markets in improving the efficiency of using funds, and I began to learn the relevant knowledge of finance by myself.

During my undergraduate, I learned nuclear engineering and technology at Huazhong University of Science and Technology, ranking seventh in my major. I performed very well in all mathematics classes, such as calculus (90), linear algebra (93), probability theory and mathematical statistics (96), and complex function and integral transform (93). At the same time, I took the initiative to act as a representative of many challenging courses, and I also achieved good results in related classes, such as theoretical mechanics (97) and mechanical principles (93). As a result, I was recommended postgraduate in a nuclear engineering major. However, my heart is already yearning for finance, and I resolutely chose to take the exam and explore the finance area.

While studying diligently, I also actively participated in academic research and Student Union. In the sophomore summer vacation, with curiosity about scientific research, I joined the computer simulation research project of material irradiation in my school, which gave me preliminary academic research training. My main task is to learn how to use LAMMPS software to simulate the radiation damage mechanism of the first wall material of Tokamak and compare the computer simulation results with the experimental observation results. While studying the radiation damage of the material, the first wall material's radiation resistance is optimized by changing the composition and structure in the computer simulation. Meanwhile, I actively participated in the Student Union serving students and joined the Cultural Communication Department. I am responsible for applying a budget of 3,000 yuan to the school every semester to buy the books students wanted to read and for the weekend duty of Qiming study. Simultaneously, I also organized a bi-weekly 25-person movie sharing session to enrich everyone's cultural life.

When I prepared the graduation thesis, I chose to study the public acceptance of nuclear energy from behavioral economics. Under my advisor's guidance, I independently collected and sorted out the data through the questionnaires. Through using the different expressions of the

same question in the questionnaire and the asymmetry of people's nuclear radiation value function obtained by data analysis, I verified that people's irrational fear of nuclear energy could be partially explained from the perspective of frame effect and prospect theory in behavioral economics. And I put forward some suggestions to improve public acceptance of nuclear energy accordingly.