

Daichi Suwa

Condensed Matter Theorist

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Statement of Purpose

As an undergraduate physics major at the University of Texas at Austin with the Dean's Scholars Honors Program, I am eager to specialize my condensed matter physics skills further and contribute to the development of the theory of strongly correlated electronic phases and emergent phenomena in thin-film materials.

During my undergraduate studies, I developed a solid foundation in Quantum Mechanics, Statistical Mechanics, and Solid State Physics. Not only have I studied in upper-division physics classes, but I have also proactively sought opportunities to study materials beyond the undergraduate level and to apply the skills to various projects. Through participation in reading programs, I have acquired a rigorous foundation in condensed-matter theory through field-theoretical approaches. Through my individual study, I have developed computational skills, including mean-field self-consistent field methods.

My long-term goal is to lead a research group on correlated quantum materials and topological superconductivity in either academia, a national laboratory, or industry R&D on quantum materials. I am particularly interested in advancing the theoretical understanding of novel quantum phases of materials and laying the groundwork for technological advancements in future society. The [university] has a cutting-edge experimental facility and active, close collaboration between theory and experimental groups. Pursuing graduate studies here would offer me an exceptional environment to develop myself into an independent condensed-matter theorist.

I would be honored to pursue my graduate studies in your department and contribute to the academic community and student life as an international student.

Sincerely,

Daichi Suwa