
# Daichi Suwa

Condensed Matter Physicist

502 Elmwood Pl, Austin, Texas 78705

512-920-8238 daichi.suwa@utexas.edu Professional Portfolio


Dear Hiring Manager,

I am a highly motivated undergraduate physics student interested in applying for your engineering position. As a student actively pursuing condensed matter physics, I am enthusiastic about the intertwined future of quantum computing and condensed matter physics, and I see how each field will mutually enhance the other. I'm passionate about advancing quantum computing technologies, and my diverse experience in experimental, theoretical, and computational physics research, coupled with my proactive learning of new skills, makes me eager to make a valuable contribution to your team.

This fall, I will be in my fourth year pursuing a physics degree through the Dean's Scholar Honors Program at the University of Texas at Austin, and I have maintained a 3.6 GPA in upper-division courses. Through university courses, I have a solid foundation in Quantum Mechanics, Statistical Mechanics, Fluid Dynamics, and Solid State Physics, as well as the basics of QFT.

Not only am I maintaining my GPA, but I am also working on individual research at my university. I am researching condensed matter theory in Allan MacDonald's group (I am the only undergraduate in this lab). Dr. MacDonald is famous for his research on Moire bands in twisted thin-film materials and has received the Wolf Prize in Physics for predicting the magic angle that turns twisted bilayer graphene into a superconductor. I am currently researching magnetic anisotropy in thin-film (TMDs), and in doing so, I have developed my own Hartree-Fock program from scratch (without using libraries for HF) to gain a deeper understanding and insight for my further research in the future. Through this research experience, I have gained a theoretical foundation and functional computational skills, including Markov Chain Monte Carlo and the Hartree-Fock self-consistent field method.

Outside of the school, I also work on personal and friends-teamwork projects using coding skills. I actively learn to use new tools that would be useful in respective projects, such as GPU computation. The languages I use are Rust for various types of (mostly low-layer) projects, Julia for physics computation, and Typescript for application development. I am comfortable and fluent in using Python and Java as well.

I am passionate about participating in your project; I am willing to tackle problems with my strong problem-solving skills, including programming, physics, and research experience. I have been proactively using LLMs to generate personalized textbooks to learn new fields and their prerequisites effectively. And as such, I am very used to learning new fields and applying the knowledge I gain alongside my current expertise.

I am looking to work after my graduation in May 2026. Please reach out to me by phone or email if you have any questions about my qualifications. Thank you for your time and consideration, and I look

forward to the possibility of contributing to your team!

Sincerely,

Daichi Suwa

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