Daichi **Suwa**

B.S. (Honors) in Physics | University of Texas at Austin

About me

Passionate about the theories of correlated electronic phases and the emergent phenomena in thin-films. Application of computational methods and theoretical tools (e.g. QFT) in condensed matter physics.

Contact

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Languages

Japanese — Native

English — Fluent

Programming Languages

Rust

Javascript/Typescript

Julia

Python

Java

Technology

GPGPU | CUDA.jl | WGPU | OS-dev | WASM | Binary Parser | Tauri | Linux | Embedded

Physics

Quantum Mechanics | QFT | Feynman Path Integral | Computational Physics | Superconductors | Condensed Matter Theory | Thin-film | Graphene

Education

2026 **B.S. in Physics (Honors)**
University of Texas at Austin — Austin, TX, USA

1943 **High School**
Mountain View High School — Mountain View, CA, USA

Research Experience

2024 - now **Condensed Matter Theory**
Allan H. MacDonald's Group | University of Texas at Austin — Austin, TX

- Individual study on theoretical/computational physics; constructions of physical models of materials and computational solvers.
- Implemented the Hartree-Fock self-consistent field solvers from scratch in Julia-lang, and applied on:
  - Tight-binding model of monolayer Graphene
  - Continuum model of Rhombohedral Multilayer Graphene
- Studied converged states for each isospin-polarization (spin and valley); mapped energetically stable phases under different parameters (carrier density, interlayer bias, etc.)

2023 **Magnetic Matter Experiment**
Freshman Research Initiative | University of Texas at Austin — Austin, TX

- Synthesizing perovskite material (RNiO3) for finding doping rate that will make the sample superconductive.
- E-beam deposition, a technique used to create thin film crystals on substrates by beaming into a target material in a vacuum chamber where pressure and temperature is controlled.

Employment

2026 **Intern (Incoming), Quantum Computing Applications Research**
QunaSys Inc. Tokyo, Japan (Remote)

- Selected for a competitive internship program focused on exploring industrial applications of quantum computing.
- Research on corporate use cases, applying academic knowledge to real-world industry challenges.
- Scheduled to collaborate with client companies to design discussion frameworks and identify areas where quantum algorithms can provide advantage.

Grants and Awards

Sept 2025 **Walter E. Millet Endowed Scholarship in Physics**
University of Texas at Austin

Sept 2024
Sept 2023 **Melvin J. Rieger Scholarship Fund in Physics**
University of Texas at Austin

Oct 2022 **Qiskit Fall Fest 2022 3rd Prize**
UT Quantum Collective

June 2022 **Dean's Scholars Honors Program**
University of Texas at Austin