DongYu Weng

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Education

Carleton College — Northfield, MN
Expected Bachelor of Arts in Physics and Computer Science — *Expected June 2028*

Experience

Makerspace Manager — Sep. 2024 – Present
Carleton College — *Northfield, MN*

- Assist students and faculty members in projects ranging from sticker making to robot building

Optics Education Lab Assistant — Jan. 2026 – Present
Carleton College — *Northfield, MN*

- Design and implement accessible, low-cost optics activities to engage underrepresented communities in foundational physics concepts
- Assess student comprehension through activity-based evaluations and refine materials to improve engagement and conceptual understanding

Engineering Design Associate — May 2025 – Present
Fuzhou Changhui Light Steel Structure Building Company — *Fuzhou, China*

- Converted 2D building schematics into 3D models using CAD software, improving visualization and structural accuracy
- Collaborated with engineers and designers to ensure compliance with project specifications and safety standards

Data Analysis Intern — Mar. 2024 – June 2024
Office of The State Superintendent of Education — *Washington, DC*

- Researched the effects of chronic absenteeism and truancy within DC schools culminating in a presentation to the public

Barista — July 2023 – May 2024
Luna Hall DC — *Washington, DC*

- Served as cashier and prepared specialty boba beverages in a fast-paced customer service environment

Projects

Chaotic Oscillator Analysis | *Python, NumPy, Physics* — Jan. 2026 – Mar. 2026

- Simulated complex physical systems by building numerical models in Python and NumPy to track the motion of coupled oscillators
- Measured system randomness and chaos by calculating Lyapunov exponents and permutation entropy to identify patterns in the data
- Generated Poincaré maps to create visual models of chaotic behavior, helping to identify stable vs. unstable regions in the simulation

Scheme Interpreter | *C, Systems Programming, Data Structures* — Jan. 2026 – Mar. 2026

- Developed a functional Scheme interpreter from scratch in C, implementing a custom tokenizer and a recursive bottom-up parser to process S-expressions
- Built a custom memory allocator and environment-model evaluator to manage variable scoping and efficient data storage during program execution
- Optimized code performance by using low-level pointer arithmetic and manual memory management, ensuring stable execution of complex nested functions

Certifications and Technical Skills

Google: Cyber Security, Data Advanced Analysis Specialization, IT Automation with Python Specialization
Georgetown School of Continuing Studies: Cybersecurity: Protecting Our Digital Future
Languages: Python, C/C++, Kotlin, HTML/CSS, Scheme
Developer Tools: Git, Docker, VS Code, Visual Studio, Eclipse, Autodesk Fusion 360, Microsoft Excel