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(515) 567-0981

Jacques Attinger

Education

University of Chicago — Chicago, IL
B.S. in Mathematics and Physics, GPA: 3.9/4.0 — *Jun 2028*

- **Relevant Coursework**: Accelerated Real Analysis, Abstract Linear Algebra, Mathematical Probability, Algorithms and Data Structures, Honors Electricity and Magnetism, Honors Waves
- **Activities and Societies**: Geographic Studies Club, Robotics, Friends of Washington Park, CompileHer, Intramural Soccer

Ames High School — Ames, IA
Valedictorian, GPA: 4.0/4.0

- **Awards/Honors**: National Merit Scholar, Iowa Governor's Scholar, CelebrAsian Scholar Runner-up, U.S. Presidential Scholar Candidate

Work Experience

Argonne National Laboratory — Chicago, IL
Software Engineering Intern — *Jun 2025 – Present*

- Deployed a Convolutional Neural Network (CNN) to classify energy-dispersive X-ray spectra from a Scanning Electron Microscope (SEM) into elemental classes, reducing data acquisition times by up to 90%
- Integrated SLADS-Net (Supervised Learning Approach for Dynamic Sampling using Deep Neural Networks) from research literature with SEM control software via the PyPhenom API, increasing image reconstruction accuracy by 21% over random sampling methods
- Developed a fully autonomous image analysis pipeline that performs image segmentation + feature detection using OpenCV and acquires X-ray spectra for 500+ particles per run without human intervention; adopted by other Argonne research groups to analyze nickel microparticles and diamond membrane defects

UChicago Yang Lab — Chicago, IL
Lab Systems Engineer — *Feb 2025 – Present*

- Designed a safety interlock system linking lab sensors with control software to monitor and automatically shut down quantum manufacturing systems in cases of overheating or underpressurization
- Developed a Graphical User Interface application to dynamically store and visualize real-time vacuum chamber pressure/temperature data
- Engineered a custom Modbus-based serial communication system between a PC and Eurotherm temperature controller, including wiring a USB-to-RS485 converter and assembling cabling

Princeton Combustion & Low-Carbon Energy Conversion Lab — Princeton, NJ
Computational Modeling Intern — *Jun 2023 – Aug 2023*

- Conducted simulations of e-fuel oxidation at supercritical pressures, identified discrepancies between experimental results and predictions from state-of-the-art oxidation models
- **Publications**: Mei, B., Wang, Z., Thawko, A., Liu, N., Thompson, L., **Attinger, J.**, & Ju, Y. (2024). Dimethoxymethane low- and intermediate-temperature oxidation up to 100 atm. Proceedings of the Combustion Institute

Iowa State University Poly Cy Lab — Ames, IA
Student Researcher — *Jan 2023 – May 2023*

- Operated extrusion and injection-molding manufacturing technologies to aid in biobased polymer production
- **Publications**: Kuehl, B., Raman, S., Becker, A., Garg, V., Roberts-Dobie, J., McCaslin, A., Joran Brensdal, **Attinger, J.**, et al. (2024). Fully Atom-Efficient Solvent-Mediated Biopolymer Manufacturing: A Base Case Illustrated with Macromolecular Surfactants Tailored to Stable Polymer–Water Interfaces. ACS Applied Materials and Interfaces

Skills

Technical: Python, C++, PyTorch, Mathematica, OpenCV, Modbus, RS485

Languages: French (native), Mandarin Chinese (conversational)