

Carl Xu

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EDUCATION

Purdue University

May 2027

Bachelor of Science in Computer Engineering, Minor in Economics and Mathematics

GPA: 3.96

- Concentrations: Computer Systems and Software Engineering
- Awards: Dean's List & Semester Honors Spring '25, Fall '24, Spring '24, Fall '23; Trustees Scholarship
- Relevant Coursework: Software Engineering, Data Structures, Python for Data Science, Advanced C Programming

EXPERIENCE

GeoML

West Lafayette, IN

Data Analysis Intern

Jan. 2025 — Present

- Analyzing 500M+ data points to understand machine learning model predictions performance, employing NumPy arrays and pandas dataframes to enhance efficiency and spectral clustering to determine correlation
- Streamlining machine learning model prediction metrics graph construction, making use of clean functional programming for robustness and maintainability
- Decreased script runtime 20x through optimizing matrix computation through efficient NaN value handling

NextGear Capital by Cox Automotive

Carmel, IN

Software Engineer Intern

May 2025 — Aug. 2025

- Explored 5+ technologies and infrastructure-as-code tools, including Azure, Kubernetes, and Terraform, to host and manage Wiki.js
- Optimized 20+ generative AI prompts in an agile environment, automating and centralizing documentation for easy access and collaboration across teams
- Secured 3rd place in a generative AI-themed hackathon, leveraging Angular and OpenAI API to deliver innovative solutions as part of a professional development program

Lee Memory and Cognition Lab

West Lafayette, IN

Research Assistant

Jan. 2025 — May 2025

- Parsed 100ms intervals of screen recording to locate cursor utilizing OpenCV template matching
- Fleshed out a 10+ data metrics automation testing script
- Optimized runtime 12x through taking advantage of dynamic memory and loop condensing

RadioHound by the Wireless Institute of the University of Notre Dame

Notre Dame, IN

Software Engineer Intern

May 2024 — Aug. 2024

- Expanded OS compatibility 80-fold by adapting original Linux/Unix-specific code for Windows support, utilizing workarounds for system diagnostics, Adafruit-BBIO, and SSH tunneling
- Implemented a neural network heat map with millisecond-level refresh rates, enabling rapid data visualization of radio wave activity, applying TensorFlow, PyTorch, and data manipulation and analysis
- Delivered 10+ presentations, highlighting key accomplishments to boost transparency and team alignment

PROJECTS

Chinese Poker | *Python, PyTorch, Object-Oriented Programming, Monte Carlo Tree Search* Dec. 2024 — Present

- Leveraging object-oriented programming and a circular linked list to build a traditional card game run in terminal
- Building a "Monte Carlo Tree Search"-based AI for the user to play against

LEADERSHIP

Purdue University School of Electrical and Computer Engineering

West Lafayette, IN

Data Structures Teaching Assistant

Aug. 2025 — Present

- Mentoring 200+ students in data structure and algorithm concepts like graphs and Dijkstra's Algorithm
- Addressing 30+ inquiries weekly, clarifying complex concepts and facilitating an active learning community

TECHNICAL SKILLS

Languages: Python, C/C++, MATLAB, SQL (Postgres), TypeScript, JavaScript, HTML/CSS, GraphQL, YAML

Frameworks: Flask, Angular, CUDA, Django, Django REST framework, Pytest, unittest

Developer Tools: Git, VS Code, AWS, Visual Studio, Azure, Postman, Docker, Kubernetes, Colibra, Artifactory

Libraries: pandas, NumPy, Matplotlib, scikit-learn, OpenCV, RegEx, SciPy, TensorFlow, PyTorch, requests, subprocess