

Jude Lwin

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Education

University of Maryland, College Park

Bachelor of Science, Computer Science and Mathematics

GPA: 3.95/4.00

May 2027

- **Courses:** Networks, Databases, Computer Systems, Machine Learning, Data Science, Advanced Algorithms, Advanced Data Structures, Object-Oriented Programming, Linear Algebra, Linear Optimization
- **Awards:** CS Departmental Honors, Design Cultures & Creativity Honors College (DCC), Dean's Scholarship

Technical Skills

Languages: Python, C++, Java, TypeScript, JavaScript, C, Rust, OCaml, Go, SQL, R

Frameworks/Libraries: Scikit-Learn, Pandas, FastAPI, Flask, React, Node.js, Express

Technologies/Tools: Git, Firebase, AWS, Docker, PostgreSQL, Snowflake, MongoDB, Unix, CI/CD, REST APIs

Experience

Capital One

McLean, VA

Software Engineer Intern

Jun. 2025 – Aug. 2025

- Built automated **LLM** evaluation pipeline in **Python/Snowflake** scaling model validation from dozens to 10K+ queries per deployment, reducing engineering time from days of manual review to overnight batch processing
- Trained ensemble classifiers with **scikit-learn** (Random Forest, XGBoost) and developed **NLP** scoring system (ROUGE, Levenshtein, fuzzy encoding) achieving 91.2% accuracy in deployment verification
- Engineered backtesting framework to validate metric/classifier updates against all previous evaluation runs

University of Maryland

College Park, MD

Machine Learning Researcher | Advisor: Dr. Furong Huang

Sep. 2025 – Present

- Investigating reinforcement learning approaches for enabling LLMs to self-improve on math and coding tasks

WISE Cities

College Park, MD

Software Engineer Intern | AI/ML Club

Feb. 2025 – May 2025

- Led backend development of a recommendation system for older adults to find local organizations and activities
- Engineered scalable **gRPC** microservice with **MongoDB** querying and **Pydantic** data validation
- Integrated all-MiniLM-L6-v2 and **Pinecone** to enable sub-100ms k-NN recommendations

USDA

Riverdale, MD

Technology Intern

Jun. 2024 – Aug. 2024

- Automated inbox processing with Power Automate and Microsoft Lists; reduced team's manual load by 70%
- Directed accessibility testing across 142 web apps for Section 508 compliance
- Built **Python** tool for USDA document lifecycle validation using **Pandas**, reducing processing time by 80%

University of Maryland

College Park, MD

Teaching Assistant, CMSC330 (Programming Languages)

Jan. 2025 – Present

- Lead weekly discussion for 30+ students, host 5+ weekly office hours, and coordinate grading with 39 TAs
- Develop and test 7 **OCaml/Rust** projects, writing 50+ unit tests and documentation for 900+ students
- Streamline releases using GitHub, **Docker**, and GitHub Actions, improving deployment efficiency

Projects

Distributed Build System



| C++, gRPC, Redis, Docker

- Built a distributed build system that parallelizes C++ compilation tasks across networked nodes using **gRPC** coordination and dependency-graph scheduling
- Added artifact caching with **Redis** and containerized benchmarks to evaluate scalability and fault recovery

Logging and Monitoring Platform



| Java, Spring Boot, PostgreSQL, Redis Streams, Prometheus

- Developed a centralized logging and metrics service for containerized apps using **Redis Streams** and **Prometheus**
- Integrated **PostgreSQL** for structured log storage and **Grafana** dashboards for querying and visualization

Smart Study Assistant



| Python, FastAPI, Celery, Docker, Supabase, Pinecone, AWS S3, React

- Developed a distributed study assistant using **FastAPI**, **React**, and **Docker** microservices, allowing students to organize notes by course and query them in natural language to retrieve cited excerpts for efficient review
- Implemented RAG pipeline (**Celery**, **Pinecone**) for PDF parsing, chunking, and sub-200ms semantic search
- Integrated **Supabase** for authentication and **AWS S3** for storage, ensuring secure, scalable multi-course support