Alexandre Sauquet

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Education

Purdue University West Lafayette, IN

Bachelor's of Science: Computer Science Honors, Artificial Intelligence, Mathematics, Statistics *August 2023 — May 2027*

Minor: Psychology

- Cumulative GPA: 3.88/4.00 | Semester Honors and Dean's List, John Martinson Honors College.
- Relevant Coursework: Data Mining & Machine Learning, Statistical Theory, Artificial Intelligence, Linear Programming and Optimization Techniques, Computational Methods in Optimization (Graduate), Elementary Linear Algebra, Analysis of Algorithms.

Professional Experience

CAST Software | FastMCP, Neo4J May 2025 — August 2025

Intern AI *New York City, NY*

- Integrated CAST Software's code analysis platform with MCP servers, enabling AI-powered insights from 150+ technologies directly in GitHub Copilot and VS Code.
- Built APIs and optimized deployment for 44 MCP tools, connecting legacy analysis systems to modern AI agenetic assistants and streamlining enterprise implementation by containerizing with Docker.

Purdue University Research | Pytorch, Optimizaiton Theory, SLURM November 2023 — Present

Undergraduate Researcher *West Lafayette, IN*

- Extending theoretical proofs for the Edge of Stability phenomenon under Prof. Ruizhe Zhang, analyzing convergence improvements with momentum in gradient descent optimization.
- Expanded healthcare access for rural communities by building a reasoning-action (ReAct) agent enabling private consultations, structured symptom logging for physician review, and integrated appointment scheduling.
- Developed multimodal AI models by fine-tuning state-of-the-art LLMs to automatically identify instruction steps and generate contextual visual feedback, streamlining user workflows and improving task completion accuracy.

Duarte, Inc. | HuggingFace, LlamaIndex May 2024 — August 2024

Jr. AI Engineer Intern *Santa Clara, CA*

- Implemented advanced AI models within consulting software solutions by creating custom pipelines, generating empathic human-like presentations that increased production speed by 29%.
- Architected software leveraging large multimodal models that analyzed diverse user-uploaded content with safe guardrails, expanding the company's service capabilities.

Projects

TE Connectivity AI Cup: 1st place National, AI Assisted Manual Assembly Process Analysis Dec 2023 — May 2024

- Achieved 1st place Nationally and 2nd place Internationally in TE Connectivity's Collegiate Competition by outperforming 46 teams from 31 universities.
- Trained and optimized a diffusion transformer model for manufacturing action segmentation by fine-tuning hyperparameters, achieving 88.7% accuracy in production environment analysis.
- Constructed a patented hand detection system using YOLO architecture by implementing automatic task labeling, enabling pipeline generalization across multiple production lines.
- Generated $170,000 in revenue by securing over 50 deployment opportunities, delivering a complete return on investment within 3 months.

Extracurricular Activities

Machine Learning at Purdue (Project Advisor) | PyTorch, QuantConnect, DagsHub November 2023 — Present

- Engineered time-sequence news-alert transformer models for stock price prediction by analyzing market patterns by considering abstract features, enhancing trading strategy development.
- Won DagsHub-sponsored hackathon by designing a multi-staged Scene Graph Generation model, outperforming competing teams with novel approach.

Skills

- **Programming Languages**: C++, Python [PyTorch, TensorFlow, Keras, OpenCV, MatplotLib, SKlearn, Pandas, Metalog, NumPy, SciPy, Ultralytics, FastMCP], Java, C, JavaScript, x86_64, Julia, Neo4J, Bash.
- **Technologies**: React, Git, GitHub, UNIX/Linux, CVAT, DagsHub, Typst, Latex, SLURM, QuantConnect, LlamaIndex.
- **Languages:** French (native), English (bilingual), Spanish (elementary).