Lucas Ugaz

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EDUCATION

B.S. Computer Science with a Concentration in Machine Learning 08/2021 – 05/2025
Purdue University
- Relevant Coursework: Machine Learning, Artificial Intelligence, Data Structures, Algorithms, Database Systems

PROFESSIONAL EXPERIENCE

Software Engineer Intern 06/2024 – 08/2024
Morningstar
- Developed and trained a 50% more efficient code generation AI for Analytics Labs, contributing to a department's $197 million revenue last year by streamlining code generation processes based on user requests.
- Built advanced embedding models and integrated Retrieval-Augmented Generation (RAG), boosting task performance by 30%.
- Implemented efficient storage and retrieval of pairwise similarity results, optimizing corpus building through global metric learning to embed data points while preserving neighborhood structure, achieving an average similarity score of approximately 0.60.
- Developed a full-stack application using Vue and Python, introducing a browser extension to educate users on investing terminology and provide insights into the investing world.

Machine Learning Researcher 08/2024 – present
Dormakaba (Through Purdue University)
- Led a team in developing machine learning models to predict payment delays, improving forecast accuracy and decision making.
- Designed and managed a Retrieval-Augmented Generation (RAG) system to make model outputs interpretable for non-technical users, achieving a BLEU score of 0.31 in natural language generation tasks.

Software Engineer 08/2023 – 01/2024
The Aerospace Corporation (Through Purdue University)
- Designed and deployed a full-stack software solution using Flask, C, and SQL to improve model creation transparency and streamline data extraction tools for astrophysicists and stakeholders.
- Created an AI chat bot to generate spatio-temporal graphs to astrophysicists.

Product Manager 01/2024 – 05/2024
Allison Transmission (Through Purdue University)
- Led a team of 5 PhD students in creating a software solution for spatio-temporal data analysis, enabling advanced data visualization and insights.

PROJECTS

Real-Time Multi-Voice Captioning System
- Designed and built a real-time audio processing system that combines multiple deep learning models to transcribe and attribute spoken language to individual speakers in multi-person environments.
- Applied machine learning for accessibility, enabling real-time captioning for deaf and hard-of-hearing individuals, fully offline and without relying on paid APIs.

SKILLS

Programming Language
Python, C, C++, Java, JavaScript, HTML, CSS, R, Assembly, SQL, SQLite

Tools and Systems
Data Structures, Algorithms, Bash, Unix, Vue.js, Spring Boot, Flask, Git, Docker, Jupyter, Pandas, NumPy, Scikit-learn, PyTorch, Hugging Face Transformers