Henry Lee

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Education

Purdue University | ***West Lafayette, IN*** GPA: 3.6/4.0

Bachelor of Science, Major in Computer Science, Minor in Mathematics *August 2023 – Present*

- **Relevant Coursework:** Data Structures & Algorithms, Computer Architecture, C Programming, OOP, Algorithms Analysis

Experience

Software Engineering Intern October 2024 – August 2025

Echopath LLC *Indianapolis, IN*

- Automated financial and ticket workflows with Python, reducing processing time by 40%
- Optimized SQL databases with indexing/normalization, improving query speeds for 700K+ records
- Delivered internal engineering tools that streamlined data access and increased operational efficiency

Undergraduate Machine Learning Researcher August 2025 – Present

Purdue University: The Data Mine (Empire Cooler Project) *West Lafayette, IN*

- Collaborating with a team to develop an AI-based fault diagnosis tool for refrigeration equipment
- Leveraging Large Language Models (LLMs) with Retrieval-Augmented Generation (RAG) to provide technicians with repair guidance and component replacement recommendations
- Applying NLP frameworks (spaCy), vector databases, and Streamlit to build a scalable, user-friendly application

Undergraduate Software Engineering Researcher August 2024 – December 2024

Purdue University: The Data Mine (Concrete Engine) *West Lafayette, IN*

- Developed a high-performance console program for AI/HPC workflows, cutting data retrieval time by 30%
- Designed scalable MongoDB data models and researched secure authentication + cloud integration strategies

Undergraduate Data Science Researcher January 2024 – May 2024

Purdue University: The Data Mine (Wikimedia Deutschland) *West Lafayette, IN*

- Detected 900+ data mismatches in Wikidata by designing Python + SPARQL pipelines
- Improved dataset reliability by integrating REST APIs for automated attribute validation

Projects

Ticket Search Utility | *Python, Rust, Flask, SQL* April 2025 – August 2025

- Engineered a full-stack Flask + SQL platform that reduced ticket lookup time by 80% across 700K+ tickets
- Implemented Rust ingestion pipelines to process 1M+ notes with near-instant query response
- Enhanced search accuracy by 50% through advanced filters and SQL query optimization

Digit Classifier | *Python, NumPy, Matplotlib, scikit-learn, Jupyter Notebook, Flask* July 2025

- Trained a neural network with scikit-learn achieving 97%+ accuracy on MNIST
- Deployed a Flask-based web app for real-time digit classification from user-drawn inputs

Financial Data Dashboard | *Python, Tkinter, Excel, CSV, PyCharm* December 2024 - January 2025

- Automated processing of 500+ financial records, reducing manual reporting by 60%
- Created a GUI for data visualization and entry, enabling non-technical staff to manage financial data easily

Technical Skills

Languages: Python, Java, C/C++, Rust, JavaScript, SQL
Libraries/Frameworks: Flask, React, JUnit, Node.js, Next.js, scikit-learn, NumPy, pandas, Matplotlib
Developer Tools: Git, VS Code, PyCharm, IntelliJ
Databases: MySQL, MongoDB, SQLite