Henry Lee

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EDUCATION

Purdue University | *West Lafayette, IN* <div align="right">GPA: 3.6/4.0</div>

Bachelor of Science, Major in Computer Science, Minor in Mathematics <div align="right">*August 2023 – Present*</div>
- **Relevant Coursework:** Data Structures & Algorithms, Computer Architecture, C Programming, Object-Oriented Programming, Algorithms Analysis, Multivariate Calculus, Linear Algebra, Statistics for Data Science

EXPERIENCE

Undergraduate Machine Learning Researcher <div align="right">August 2025 – Present</div>

Purdue University: The Data Mine (Empire Cooler) <div align="right">*West Lafayette, IN*</div>
- Collaborating with a team to provide technicians with an LLM-based repair guidance tool
- Applying NLP frameworks (spaCy), vector databases, and Streamlit to build a scalable, user-friendly application

Software Engineering Intern <div align="right">October 2024 – August 2025</div>

Echopath LLC <div align="right">*Indianapolis, IN*</div>
- Automated financial and ticket workflows with Python to improve work speed
- Optimized SQL databases with indexing and normalization, improving query speeds for 700K+ records
- Delivered internal engineering tools that streamlined data access and increased operational efficiency
- Utilized Python to build internal engineering tools with Tkinter, Rust, and SQL pipelines

Undergraduate Software Engineering Researcher <div align="right">August 2024 – December 2024</div>

Purdue University: The Data Mine (Concrete Engine) <div align="right">*West Lafayette, IN*</div>
- Collaborated in a startup to assist in developing a high-performance console program for AI/HPC workflows
- Worked in an Agile structure to develop a customer console program and build MongoDB models
- Researched various possible feature implementations, such as Google Cloud Storage and authentication

Undergraduate Data Science Researcher <div align="right">January 2024 – May 2024</div>

Purdue University: The Data Mine (Wikimedia Deutschland) <div align="right">*West Lafayette, IN*</div>
- Detected 900+ data mismatches by comparing mismatches to improve data quality
- Improved dataset reliability and security by integrating REST APIs for automated attribute validation
- Constructed a Python and SPARQL pipeline to retrieve data from Wikidata and external data sources

PROJECTS

Ticket Search Utility | *Python, Rust, Flask, SQL* <div align="right">April 2025 – August 2025</div>
- Developed a ticket search application to search for specific ticket notes at Echopath LLC
- Enhanced search accuracy through advanced filters and SQL query optimization
- Engineered a full-stack Flask and SQL platform that reduced ticket lookup time across 700K+ tickets

Digit Classifier | *Python, NumPy, Flask* <div align="right">July 2025</div>
- Trained a neural network with scikit-learn on Python to achieve 97%+ accuracy on MNIST
- Deployed a Flask-based web app for real-time digit classification from hand-drawn inputs

Financial Data Dashboard | *Python, Tkinter, Excel* <div align="right">December 2024 - January 2025</div>
- Automated processing of 500+ financial records to store data in one Excel sheet at Echopath LLC
- Created a GUI for data visualization and entry, enabling non-technical staff to manage financial data easily
- Employed Python frameworks to read and reformat data in pandas and numpy to Excel

TECHNICAL SKILLS

Languages: Python, Java, C/C++, Rust, JavaScript, SQL, MATLAB
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

ENGAGEMENT

Poster Presentations: The Data Mine 2024, Purdue Spring Symposium 2025, Purdue Summer Symposium 2025
Research: Building a traffic-rule pipeline utilizing logic and LLMs
Hobbies: Digital art, Writing