Christopher Lee

925-860-9467 christopherhlee6@gmail.com linkedin.com/clee140 https://clee140.github.io/portfolio

Education

Purdue University West Lafayette, Indiana
Bachelor of Science in Computer Science *May 2027*

- **Coursework:** Data Structures and Algorithms, Analysis of Algorithms, AI, Systems and C Programming
- **Awards:** First Place at Purdue University Hello World Hackathon, Dean's List, Semester Honors

Experience

Software Engineer Intern May 2025 – Present
Siemens Digital Industries Software *Fremont, California*

- Diagnosed and resolved 25+ major test case failures, boosting pass rates by 30% and improving the reliability of regression pipelines for Calibre SONR, Siemens' ML-driven EDA tool for full-chip pattern analytics.
- Fixed 5 production-critical bugs in SONR's design-for-manufacturability (DFM) feature extraction, stabilizing core functions like hotspot prediction and pattern clustering for chip defect and yield analysis.
- Improved validation coverage by developing 24 test cases, reinforcing the integrity of defect detection workflows.
- Authored 5+ technical reports outlining root cause investigations, code-level resolutions, and regression setup guidelines, driving long-term codebase maintainability.

Data Science Researcher Aug 2024 – May 2025
Sandia National Laboratories - Purdue Data Mine *West Lafayette, Indiana*

- Built a machine learning model in Python to predict the destination of flights from partial geospatial trajectory data.
- Automated model evaluation using Pandas for structured data transformation, Tracktable for geospatial analysis, and Matplotlib to visualize accuracy trends, reducing end-to-end testing time by 40%.
- Evaluated 1.9 million flight trajectories while developing 30 test cases to benchmark model performance, achieving a 17.7% improvement in model prediction accuracy.
- Delivered final project presentations to Sandia's technical staff and showcased results to industry professionals at the 2025 Purdue Data Mine Corporate Partners Symposium.

Undergraduate Student Researcher Jan 2024 – May 2024
Purdue Vertically Integrated Projects *West Lafayette, Indiana*

- Developed a FCNN using Python and NumPy with Professor Edward Delp to classify traffic signs in real-time.
- Achieved a 96% accuracy by optimizing propagation algorithms and applying mean filtering and Sobel edge detection for enhanced feature extraction.
- Integrated model into an Android app using Python Pickle serialization enabling seamless real-time classification.
- Presented research and project at the 2024 Purdue Undergraduate Research Conference to 20+ faculty and staff.

Software Engineer Jan 2024 – May 2024
Purdue University College of Engineering *West Lafayette, Indiana*

- Designed and launched a cross-platform language-learning app using React Native and Expo.
- Improved query performance by 20% through advanced SQLite indexing and wrote Python automation scripts to efficiently parse, load, and manage dynamic JSON datasets.

Projects

C to Assembly Compiler | *x86-64 Assembly Language, C Programming, Lex, Yacc*

- Developed a compiler using Lex for lexical analysis and Yacc for syntax parsing to convert C code into Assembly.
- Optimized the compiler for control flow and logical operations by leveraging registers to minimize memory access.

SkySync | *Swift, XCode, iOS App Development, Git*

- Created an iOS mobile application enabling Wi-Fi-free communication via Bluetooth with a range of 250+ feet.
- Cut message delivery speed by 2+ seconds using Apple's Core Bluetooth framework for efficient data transmission.
- Project awarded first place out of 300+ participants at the Purdue Hello World Hackathon.

Technical Skills

Languages: Python, C/C++, Java, Swift, x86-64 Assembly
Technologies: Linux, Shell Scripting, PyTorch, SQL, Android/iOS SDK, Git, JUnit Testing
Expertise: Machine Learning, Artificial Intelligence, Systems Programming, Data Science, Technical Communication