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 Hello World Hackathon, Dean's List, Semester Honors

Experience

Undergraduate Research Assistant Aug 2025 – Present
Purdue University *West Lafayette, Indiana*

- Developing LSTM-based time-series models in PyTorch to predict corn yield impacts from isolated droughts, under the guidance of Professor Pratishtha Poudel.
- Building scalable data pipelines with Pandas, NumPy, and Scikit-learn to clean and align multi-source environmental and crop variables.
- Using SHAP and Random Forest feature importance to identify key factors influencing yield variability and benchmarking ML models against traditional crop models for improved accuracy and robustness.

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

- Resolved 25+ major test case failures, increasing pass rates by 30% and strengthening regression pipelines for Calibre SONR, Siemens' EDA tool for full-chip design verification.
- Fixed 10 production-level bugs in SONR's ML pipeline, increasing reliability of chip hotspot prediction, feature extraction, and pattern clustering in customer deployments.
- Scaled end-to-end validation of SONR's ML infrastructure by 48% through the development of 20+ model-level test cases, increasing coverage and robustness of defect prediction modules.
- Boosted SONR's LightGBM regression model accuracy to 95% by implementing automated hyperparameter tuning with Optuna, enhancing generalization across diverse IC layouts.
- 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 project results to Sandia's technical staff 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 96% accuracy by optimizing propagation algorithms, applying Sobel edge detection for feature extraction, and implementing Leaky ReLU activation for improved non-linearity.
- Integrated model into an Android app using Python Pickle serialization enabling seamless 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*

- Modernized a cross-platform React Native app by resolving dependency issues and boosting database performance 20% via SQLite indexing and Python automation for JSON data handling.
- Led triage and resolution of 10+ critical bugs, enhancing app stability, performance, and user experience.

Technical Skills

Languages: Python, C/C++, Java, Swift, x86-64 Assembly
Technologies: Linux, Shell Scripting, PyTorch, TensorFlow, SQL, Android/iOS SDK, Git, JUnit Testing
Expertise: AI/ML, Systems Programming, Data Science, Technical Communication, Agile Methodologies