Christopher Lee

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Education

Purdue University West Lafayette, Indiana

Bachelor of Science in Computer Science (GPA: 3.53/4.00) *May 2026*

- **Specializations:** Machine Intelligence and Software Engineering
- **Relevant Coursework:** Data Structures and Algorithms, Intro to Artificial Intelligence, Systems Programming, Programming in C, Object-Oriented Programming, Computer Architecture
- **Certifications:** Machine Learning: AI, Python and R (Udemy) and Full-Stack Web Development (Udemy)
- **Awards:** First Place at Purdue Hello World Hackathon, Dean's List, Semester Honors

Experience

Sandia National Laboratories - Purdue Data Mine Aug 2024 – Present

Data Science Researcher *West Lafayette, Indiana*

- Built a machine learning model in Python to predict the destination of flights from partial geospatial trajectory data.
- Streamlined the machine learning pipeline by automating data preprocessing and evaluation processes with Python, leveraging Pandas for data manipulation, Tracktable for geospatial analysis, and Matplotlib for creating visualizations of accuracy trends, ultimately reducing end-to-end testing time by 30%.
- Analyzed and evaluated 66,000+ flight trajectories while designing and implementing 10+ advanced test cases to benchmark model performance across multiple dimensions, achieving a 15%+ improvement in prediction accuracy.

Purdue Vertically Integrated Projects Jan 2024 – May 2024

Undergraduate Student Researcher *West Lafayette, Indiana*

- Developed a fully-connected neural network (fCNN) from scratch using Python and NumPy with Professor Edward J. Delp to recognize traffic signs in real-time.
- Achieved a 96% classification accuracy by optimizing forward and backward propagation techniques and implementing advanced preprocessing, including mean filtering and Sobel edge detection.
- Integrated the trained model into an Android application by leveraging Python's Pickle library and a backend server.
- Presented project at the 2024 Purdue Undergraduate Research Conference to 20+ faculty and staff, effectively communicating complex machine learning concepts to a non-technical audience.

Purdue University College of Engineering Jan 2024 – May 2024

Software Engineer *West Lafayette, Indiana*

- Designed and launched a cross-platform language-learning app using React Native and Expo.
- Optimized database performance by implementing advanced indexing strategies in SQLite, reducing query response times by 20%, and streamlining data processing using Python scripts to load and manage JSON-based data.
- Developed UML diagrams to simulate user interactions and database queries, enabling robust end-to-end testing and organized Agile meetings to strengthen team collaboration and work efficiency.

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 prestigious Purdue Hello World Hackathon.

ReserVantage | *Java, Client-Server Models, Multithreading, Graphical User Interfaces (GUI), Spring Framework, JavaFX*

- Designed a multi-user marketplace calendar in Java, boosting scheduling efficiency by 75%, and directed team discussions to ensure feature alignment with user needs.
- Built a scalable client-server model supporting up to 50+ concurrent users and used file I/O for data management.

Technical Skills

Languages: C, C++, Java, Python, JavaScript, HTML/CSS, Swift, R, x86-64 Assembly
Technologies: Linux, APIs, Android SDK, iOS SDK, React, Node.js, MySQL, Git, JUnit Testing, Visual Studio
Expertise: Machine Learning, Neural Networks, App/Web Development, Systems Programming, Agile Methodologies