Christopher Lee

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Education

University of California, San Diego Jun 2027
Computer Science B.S. | Physics B.S. GPA: 3.91/4.00

- **Computer Science**: Operating Systems, Computer Networking, Parallel Computing, Statistical Learning
- **Physics**: Circuits and Electronics, Quantum Mechanics, Electrodynamics, Graduate Physics Simulation

Experience

Lockheed Martin Space, *Guidance, Navigation, and Control (GNC) Intern* | Sunnyvale, CA Jun 2026 - Sep 2026

- Increased GNC algorithm performance margin for the Next Generation Interceptor (exo-atmospheric missile defense)
- Tuned and validated PID controllers for attitude control in spacecraft simulations
- Analyzed 6-DOF spacecraft dynamics using machine learning models to optimize thrust profiles and fuel usage
- Created data analysis tools for time-series data, improving read times by 120x (1m to 0.5s) via cache optimization
- Conducted a trade study comparing quaternion-based LQR and PID controllers for optimal spacecraft attitude control
- Conducted Monte Carlo simulation for IMU sensor bias to determine maximum impact of zero-gravity offset calibrations

Johns Hopkins University Applied Physics Laboratory, *Software Intern* | Laurel, MD Jun 2025 - Sep 2025

- Developed data ingestion pipelines for the Air and Missile Defense Systems (AMDS) sector, reducing latency of updates
- Integrated static defense planner with a Common Operating Picture (COP) to enable real time defense planning
- Created high-performance video query library to aggregate time-series sensor data, powering search and filtering system

Allen Lab, UCSD, *2D Quantum Materials Researcher* Sep 2025 - Present

- Prepare exfoliated graphene and hexagonal boron nitride (hBN) for the fabrication of rhombohedral graphene devices
- Fabricate sub-nanometer hyperbolic tips using chemical etching of tungsten and gold for atomic force microscopy (AFM)
- Assemble van der Waals heterostructures layer-by-layer using the dry-transfer method under an optical microscope
- Characterize components using optical and scanning electron microscopy (SEM) to ensure thinness tolerances

Triton Unmanned Aerial Systems, UCSD, *Software Lead* Sep 2023 - Present

- Competed in the 2024 and 2025 Student Unmanned Aerial Systems (SUAS) international competitions, placing 19th
- Led software development of multi-computer autonomous systems using git version control and CI/CD pipelines
- Implemented unit, integration, hardware-in-the-loop, and field tests to cut the risk of crashing costly UAV hardware
- Led 80+ student recruitment campaign and developed an onboarding project to familiarize members with the code base

Projects

UAV On Board Computer | C++ (github.com/tritonuas/obcpp) Sep 2023 — Present

- Developed modular path planning (modified RRT*) to guide a fixed-wing UAV through waypoints and obstacles
- Refactored legacy codebase into a finite state machine interfacing with encapsulated software units, sensors, and the flight controller, removing interdependencies between 5 APIs and software units
- Deployed flight software onboard an NVIDIA Jetson Orin Nano on a fixed-wing VTOL aircraft
- Designed to be hardware agnostic, allowing for rapid prototyping with new sensors or flying test platforms (quadcopters)

Coffee Can Radar Sep 2024 — Feb 2026

- Created velocity and range detecting radar using coffee cans as a part of the Amateur Radio Club (KK6UC)
- Able to detect multiple moving objects beyond 100 meters and resolve their velocity via Doppler shift
- Implemented noise filtering and signal processing algorithms to improve signal to noise ratio

Skills

- **Programming Languages**: C/C++, Python, Java
- **Technologies**: Git, Vim, Bash, Docker, Linux, Unix, MacOS
- **Hobbies**: HAM Radio (KJ5MBW), Soccer, Hiking