

Liam Smith

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EDUCATION

Virginia Polytechnic Institute and State University — Blacksburg, VA

B.S. in Computer Engineering (Intended) | Minors: Engineering Science & Mechanics, Music | Expected: May 2030

- Galileo Engineering Living-Learning Community

Fern Hollow Academy — Charlottesville, VA

High School Diploma | Graduated: June 2026 | GPA: 4.0 / 4.0 Unweighted (4.4 Weighted)

- Dual Enrollment: Piedmont Virginia Community College

TECHNICAL SKILLS & INTERESTS

- **Programming:** Java, Python (Proficient); C++, C#, JavaScript, HTML/CSS (Familiar)
- **Robotics & Vision:** Inside-Out SLAM (Integration), Computer Vision (OpenCV, EasyOCR, Limelight), Multi-Sensor Tracking & Fallbacks
- **Hardware & Systems:** ESP32, Raspberry Pi, Linux, Docker, Nginx Proxy Manager, Tailscale, Pi-hole (DNS), Home Assistant, Klipper/Marlin, Autodesk Fusion, Onshape, 3D Printing (FDM & SLA), Git/GitHub, VS Code
- **Performing Arts & Interests:** Classical Piano (13 years solo performance), Aerial Arts (10+ years), Digital Photography

TECHNICAL PROJECTS

WhisperScribe: AI & Computer Vision Reading Companion | Personal Project

- Engineered an IoT reading device using an ESP32-CAM streaming page captures over Wi-Fi to a local Flask backend.
- Extracted text via OpenCV and EasyOCR, evaluated emotional tone using local LLM JSON pipelines, and mixed dynamic music with Pygame.

HistoryChat: Multi-Agent AI Simulation Platform | Personal Project

- Developed a full-stack Flask web application orchestrating multi-agent dialogue between 20+ historical personas using Llama 3.
- Engineered system prompts with live web search capabilities, containerized with Docker, and deployed via Tailscale Funnel.

3D Printer Hardware & Klipper Firmware Upgrade | Personal Project

- Upgraded Ender 3 mechanics and main control board, added auto bed-leveling via a hall effect sensor, and built a custom direct-drive adapter.
- Compiled customized Klipper and Marlin firmware; configured Mainsail and a custom relay module for remote network power management.

LEADERSHIP & EXPERIENCE

Camp Bow Isle — Bowen Island, BC, Canada | Junior Counselor & Photographer | Summers 2024 – 2026

- Supervised youth cabins and led daily camp activities across three consecutive summers, progressing from CIT to full counselor.
- Managed camp photography and digital media archives for documentation and community outreach.

FIRST Robotics Competition (Team 619) — Charlottesville, VA | Programming Lead | August 2025 – May 2026

- Designed autonomous trajectories and teleoperated drive controls in Java; helped qualify team for FIRST World Championship and won Glen Allen district event (Rank 1 Alliance Captain).
- Integrated Meta Quest 2 for SLAM tracking (~5mm accuracy) with custom fallback vision-weighting algorithms across dual AprilTag cameras, IMU feedback, and wheel encoders.

Blue Tent Online — Remote | Honors Chemistry Teaching Assistant | July 2025 – May 2026

- Graded weekly problem sets and lab reports for 20+ Honors Chemistry students, providing detailed technical feedback.
- Answered student coursework and lab questions, guiding problem-solving across chemistry principles.

Cedars Camps — Lebanon, MO | Maker Camp Workshop Assistant | Summer 2023

- Guided 10+ youth campers through hands-on mechanical builds, including cardboard pinball machines and PVC play sprinkler systems.
- Supervised workshop hand-tool safety and assisted campers in assembling and testing prototypes.

HONORS & AWARDS

- **Congressional Award Gold Medal (2024):** Highest national youth honor for 618+ hrs voluntary public service, personal development, physical fitness, and a 5-day expedition.
- **Piedmont Virginia Community College President's List** | Spring 2026