

BEN ROSS

College Park, MD · ben@benmross.com · benmross.com · github.com/benmross · linkedin.com/in/ben-m-ross

EDUCATION

University of Maryland, College Park — B.S. Computer Science, direct admit Aug 2026 – May 2029

- FIRE (First-Year Innovation & Research Experience), invited program. Graduating in three years. National Merit Finalist · SAT 1570, single sitting · 99th percentile, National Cyber League Fall 2025. Coursework: Object-Oriented Programming II, Discrete Structures, Linear Algebra, Analysis of Algorithms.

EXPERIENCE

U.S. Army Research Laboratory (DEVCOM) — *Research Apprentice, AEOP* Jun – Aug 2026

- Built a global GNSS spoofing detection pipeline over the position reports that ships and aircraft already broadcast publicly, using the ADS-B Navigation Integrity Category field as a GNSS-degradation proxy and a CNN over AIS vessel tracks to flag kinematically implausible movement.
- Shipped a dashboard that DBSCAN-clusters low-integrity reports to estimate probable emitter locations, with time-series views of how affected regions shift. Presented three times, including at the ARL Director's Student Research Development Program poster session.
- Stood up on-premises LLM inference so lab engineers could use agentic coding tools without data leaving the network: Muse Glimmer 30B on llama.cpp on an NVIDIA A100, Open WebUI for per-user auth and request logging, Docker and Caddy for reverse proxy and TLS, and an installer provisioning that endpoint onto engineer workstations with per-user keys and certificates.

Chalgen — *Sole Developer* May 2025 – Mar 2026

- Sole developer of an LLM platform generating cyber forensics competition challenges from natural-language prompts, plus the framework a community college ran its competition on.

Sparrows — *Lead Developer & Outreach Manager* 2023 – Aug 2026

- Built and ran a multi-tenant school platform on Next.js 14, TypeScript and MongoDB, serving 30+ schools and roughly 30,000 monthly active users as an official partner of the Montgomery County Board of Education.
- Shipped per-school routing and admin dashboards, NextAuth credential auth with bcrypt and JWT, English and Spanish i18n, a PWA, and AI schedule parsing on the Gemini API, deployed on AWS Amplify with CloudWatch monitoring, and Python and PyMongo tooling for onboarding and bulk imports.

PROJECTS

SMCS Kart — *drive-by-wire electric go-kart* · C++, Python, React · github.com/PHS-SMCS/gokart-dash 2025 – 2026

- Pitched a fully electric kart when the head of the magnet program asked two students for a way to restructure the robotics curriculum, then built it and taught the class from it.
- Designed the control stack around a single motion authority: a Teensy 4.1 owns the drive state machine, pedal mapping, watchdogs and throttle DAC, an ESP32 runs a PID steer-by-wire loop to a Talon SRX over 1 Mbps CAN, and the Raspberry Pi serving the React dashboard is advisory only, so it can crash without affecting driving.

Herald — *open-source personal agent* · Python, SQLite, MIT 2026 – present

- A personal agent running entirely on the owner's machine: ingests mail, calendar, messages, location and health data into one SQLite ledger, then runs scheduled reasoning cycles against it, architected so conclusions are maintained rather than recomputed.
- Graded autonomy enforced structurally rather than by prompt: the write path has no send function, every non-read action is logged, and the surface collecting an approval cannot carry it out. Shipped with migrations and an extension system.

PUBLICATIONS

S. Su, W. Sherman, J. Terrill, Z. Kingman, E. Ferrara, **B. Ross**, et al. "Planet Falconia: Mission Possible Using Immersive Visualization to Enable Digital Twin of Remote Sensing Data." *SIGGRAPH Asia 2026 Educator's Forum* (accepted).

LEADERSHIP

Captain & Instructor, Poolesville Computer Team — wrote the curriculum and lectured 40+ students twice weekly on 2024 – 2026 cybersecurity and machine learning, and coached them through national competitions.

SKILLS

Languages — Python, Java, C++, JavaScript/TypeScript, SQL, Bash

ML & data — TensorFlow, CUDA, OpenCV, llama.cpp, LLM fine-tuning, CNNs, clustering, anomaly detection, SQLite, MongoDB

Systems — Linux, Docker, AWS (Amplify, CloudWatch), Google Cloud, Cloudflare, Vercel, CI/CD, Caddy, Next.js, React, Flask, Teensy, ESP32, Raspberry Pi, CAN bus