

Tristan C. Grubbs

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EDUCATION

University of Virginia

May 2026

B.S. Computer Science

Relevant Coursework: Artificial Intelligence · Ethics of Artificial Intelligence · AI & Humanity · Data Structures & Algorithms · Network Security · Software Engineering

EXPERIENCE

Naval Information Warfare Center Atlantic

Stafford, VA

Scientist

Summers 2024 & 2025 · Full-Time June 2026–Present

- Consolidated 11 fragmented Excel datasets into a single interactive Power BI dashboard for senior leadership decision-making.
- Led design and began implementation of a scalable Power Apps solution to automate account management workflows, improving process efficiency.
- Authored technical design document and end-user guide; supported performance testing of secure communication systems.

PROJECTS

Scam Shield

Python · TypeScript · Raspberry Pi · Gemini API

- Placed 3rd out of 220+ projects at HooHacks 2026 — a real-time scam call detection device built on Raspberry Pi.
- Engineered dual detection pipeline using Whisper STT and Gemini API, triggering alerts within 10 seconds of a scam pattern.
- Built multi-channel alert system: SMS (Twilio), voice (Google Nest + ElevenLabs), LED indicators, and Auth0-secured family dashboard on Vercel.

Macro Map

Next.js 16, TypeScript, React, globe.gl, Vercel KV, GitHub Actions, IMF PortWatch, EIA API

- Built a real-time geopolitical risk intelligence platform aggregating live data from 6+ APIs (IMF PortWatch, EIA, ACLED, NASA FIRMS, FRED) to track disruptions at 10 global shipping chokepoints representing ~60% of world trade volume.
- Rendered a GPU-accelerated 3D globe using globe.gl with 15 animated shipping lanes; engineered a state machine with N-of-3 hysteresis to classify chokepoints and a GitHub Actions cron pipeline for real-time disruption state updates.

AI Decoded

React · Content Platform · AI

- Built a structured publishing platform delivering curated weekly AI briefings across models, tools, business, and regulation.
- Designed to translate fast-moving AI developments into practical insights for business and career audiences.

UVA Club Hub

React · Firebase

- Built centralized platform replacing fragmented club discovery across GroupMe chats and emails at UVA.
- Implemented real-time club search, join flows, and announcement broadcasting with live Firebase data sync.

ESG & Public Sentiment Analysis

Python · FinBERT · Machine Learning

- Built FinBERT sentiment pipeline on financial news to test short-term stock movement prediction using Logistic Regression and XGBoost.
- Analyzed signal uncertainty across model types; documented limitations of ESG sentiment as a standalone predictive feature.

SKILLS

Languages & Data: Python, SQL, Power BI, Power Apps, Excel

AI & ML Tools: Gemini API, OpenAI Whisper, ElevenLabs, Claude, and prompt engineering techniques

Development: Next.js, TypeScript, React, Django, FastAPI, Firebase, Git, globe.gl, Vercel KV, GitHub Actions

Other: Active US Government Secret Clearance