

TREVON WOODS

AI/ML Engineer

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PROFESSIONAL SUMMARY

AI/ML engineer and Applied AI & Robotics student with hands-on experience designing, training, and deploying full-stack AI systems — including LLMs, RAG pipelines, computer vision, and edge AI. Fine-tuned large language models with parameter-efficient techniques (QLoRA), deployed generative image pipelines on Hugging Face, and built an edge health-monitoring system achieving 94% early-detection accuracy. Proficient in Python, C++, TensorFlow/PyTorch, LangChain, Docker, and AWS SageMaker; focused on shipping reliable, cost-efficient, user-ready deployments.

AREAS OF EXPERTISE

- **Programming:** Python, C++, JavaScript/TypeScript, TensorFlow, PyTorch, LangChain, LangGraph, Pandas, NumPy
- **Tools & MLOps:** Docker, Kubernetes, Git, Airflow, AWS SageMaker, Keras, LangSmith, MCP, Matplotlib
- **Deployment:** SQL, MongoDB, Django, Flask, FastAPI, Node.js, Streamlit, React, Vue, Angular, Next.js, Render, Heroku, Vercel
- **Data Analysis:** PCA, Regression/Classification, Clustering, NLP, Time Series, EDA

PROJECTS

Pokémon TCG Reinforcement Learning Agent

Aug 2026

- Built a custom reinforcement learning agent to play Pokémon TCG using a simulated game environment and PyTorch.
- Designed reward shaping for card sequencing, board development, energy management, damage, knockouts, and win conditions.
- Integrated multiprocessing to run parallel battle environments and accelerate experience collection during training.
- Developed matchup-based training against mirror, balanced, and hard-counter decks to improve adaptability and strategic decision-making.

Bio Impulse — Edge AI Health Monitoring System

May 2026

- Engineered a real-time edge AI health-screening system on a Raspberry Pi 5, integrating YOLO (Ultralytics) for automated person detection and tracking in public environments.
- Trained and deployed a logistic regression classifier on multi-sensor physiological data, achieving 94% accuracy for early illness detection.
- Architected a multi-sensor I²C bus topology connecting a thermal camera array (MLX90640) and a photoplethysmography sensor (MAX30102) to a Raspberry Pi microcomputer.
- Built a custom hardware prototype with a Proto HAT layout and custom pin mappings for stable power delivery across concurrent peripherals.

Custom Text-to-Image Generator

Feb 2026

- Fine-tuned Stable Diffusion (v1.5/XL) on a curated high-resolution image dataset using DreamBooth and LoRA for high-fidelity subject consistency.
- Deployed a scalable generative inference pipeline on Hugging Face Spaces with a Gradio interface for real-time, user-prompted image generation.
- Reduced inference latency 35% by optimizing model weight loading and memory utilization on shared GPU tiers.

Plot to Lot Predictor

Dec 2025

- Collaborated with a classmate to build a solution for the land-development industry: an ensemble classifier predicting buildable lot counts from a given plot.
- Combined multi-modal OCR, packing algorithms, and a CNN for plot-shape analysis; identified class imbalances and proposed data-centric fixes.
- Ran training and experimentation on Google Colab with cloud-based dataset management workflows.

AI-Powered Financial Intelligence Dashboard | Full-Stack AI Application

Oct 2025

- Built a full-stack financial analytics platform delivering real-time stock data, interactive charts, market movers, and company fundamentals.
- Integrated OpenAI and LangChain to analyze financial news and generate bullish/bearish insights and market outlook summaries.
- Developed real-time data pipelines using Twelve Data, Alpha Vantage, and Socket.io for live quotes, watchlists, and market updates.
- Implemented secure JWT authentication, MongoDB persistence, and a responsive React interface using Redux, Material UI, and Tailwind CSS.

AI Wellness App (RAG) & AI Product Descriptor

Aug 2025 – Oct 2025

- Co-built a RAG-based health and wellness web app, integrating a vector database with an LLM via LangChain for source-grounded responses.
- Built a Streamlit app generating AI-driven product descriptions, establishing a CI/CD workflow for Streamlit deployments.

AI Research & News Analysis Agents

Aug 2025

- Built a multi-agent research assistant using LangChain/LangGraph and the Firecrawl API to automate live web retrieval, reasoning, and MLA-cited report generation with chain-of-thought prompting.
- Built a companion news-analysis agent applying sentiment analysis, NER, and LDA topic modeling (spaCy, NLTK, scikit-learn, BeautifulSoup) to real-time news data.

PROFESSIONAL EXPERIENCE

Mortgage Broker — HK Lending LLC

Feb 2022 – Present

- Built and maintained a referral network of mortgage brokers, real estate agents, and industry contacts to grow loan volume.
- Used Python scripts to analyze financial data and match clients to loan products, increasing loan-match rate by 86%.

Special Education Teacher — Durham Middle School

Aug 2020 – Aug 2021

- Evaluated and reported on student progress and behavior; implemented behavior-management strategies to reduce disruptions and support positive classroom outcomes.

Research Call Center Associate — Creative Consumer Research

Sept 2018 – Mar 2019

- Conducted literature reviews and developed research strategies to support project decision-making.
- Trained and mentored new representatives on customer service policies and best practices.

EDUCATION

B.A.T. in Artificial Intelligence & Robotics — Houston City College

Expected May 2028

- GPA: 3.9 — Treasurer, National Society of Collegiate Scholars (HCC chapter)
- Inducted: National Society of Collegiate Scholars, National Society of Leadership and Success, Phi Theta Kappa Honor Society
- Member, VICEROY Scholar Program

Software Engineering Professional Certificate — Coding Temple

Jun 2023

- Full Stack Development: React, Node.js, JavaScript/TypeScript, HTML, CSS, Bootstrap, Tailwind CSS

CERTIFICATIONS

- Google Advanced Data Analytics Professional Certificate — Coursera, Jul 2026
- Google Data Analytics Professional Certificate — Coursera, Jun 2026
- Google Cybersecurity Professional Certificate — Coursera, Jul 2024

EXTRACURRICULAR ACTIVITIES

- Treasurer, National Society of Collegiate Scholars – HCC Chapter (2026–Present)
- VICEROY Scholar; Community Service Volunteer