

Aarin Basu

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EDUCATION

University of Maryland, College Park

B.S. in Computer Science & Mathematics; Minor in Business Analytics

Expected May 2028

GPA: 3.95

Relevant Coursework: Algorithms, Data Structures, Computer Systems, Data Science, Object-Oriented Programming, Probability, Linear Algebra, Statistics, Vector Calculus, Organization of Programming Languages, Discrete Mathematics

EXPERIENCE

Parabole.ai

May 2025 – Aug 2025

Software Engineering Intern

- Designed and implemented scalable backend services in Python to support AI-driven data products used in production environments.
- Integrated machine learning model outputs into low-latency REST APIs, enabling real-time inference and downstream analytics.
- Refactored core services and added automated tests to improve system reliability and deployment confidence.

City of Stamford

Jun 2024 – Aug 2024

Operations Intern

- Automated Oracle-based reporting pipelines for Permitting and Licensing systems, reducing manual data workflows by 40%.
- Performed UI/UX and accessibility audits on public-facing web portals, improving usability and WCAG compliance.
- Built SQL and Python data extraction and validation scripts to support operational analytics.

University of Connecticut Research (EPSRC HEED Project)

Jun 2023 – May 2024

Research Lead

- Led end-to-end data analysis of renewable energy deployments across refugee camps in Rwanda and Nepal.
- Developed Python pipelines using Pandas and NumPy to clean, analyze, and visualize 500K+ records.
- Translated quantitative findings into actionable insights for interdisciplinary teams and policy stakeholders.

University of Connecticut & State Street

Jun 2023 – Sep 2023

Software Engineering Intern

- Built a financial analytics pipeline combining REST APIs, cloud-based NLP, and sentiment analysis models.
- Automated ingestion and preprocessing of market data using Python and SQL, increasing throughput by 3x.
- Developed visual analytics dashboards analyzing correlations between market performance and sentiment signals.

City of Stamford

Jun 2023 – Aug 2023

Building Department Intern

- Built an internal web application consolidating 10K+ municipal records backed by Oracle SQL and PostgreSQL databases.
- Designed Python-based ETL pipelines to migrate legacy zoning and construction data into normalized schemas.
- Implemented secure REST APIs for internal analytics dashboards and optimized SQL queries reducing latency by 30%.

PROJECTS

AEGIS — AI-Enhanced Combat Triage Copilot

Python, PyTorch, YOLOv8, Whisper, Streamlit, SQLite

- Built an edge-deployable AI copilot that fuses real-time computer vision and audio analysis to support mass casualty triage, running fully offline on NVIDIA Jetson hardware at 15–30 FPS.
- Developed a multi-model perception pipeline integrating YOLOv8 detection, ByteTrack/DINOv2 re-identification, MobileSAM wound segmentation, and zero-shot CLAP audio classification for respiratory monitoring.
- Designed a Streamlit tactical dashboard with voice-commanded triage updates via Whisper, rule-based SALT/TCCC decision support with human-in-the-loop confirmation, and automated 9-line MEDEVAC request generation.

OutlierQ — Options Trading Signal Engine

Python, FastAPI, React, TypeScript, yfinance, VADER

- Built an end-to-end financial signals platform processing real-time news and market data to generate options trading recommendations with strike price and expiry logic.
- Developed a multi-stage anomaly detection pipeline using z-score volume analysis, sentiment filtering, and keyword-based classification across event types.
- Designed a full-stack dashboard with React/TypeScript and FastAPI to visualize live signals, price trends, and model performance metrics.

PostPilot — Automated Social Posting Platform

React, Node.js, Google APIs

- Developed an application that automatically converts organizational Google Calendar events into scheduled social media posts.
- Built Google Calendar API integrations to extract event metadata and dynamically generate formatted content.
- Implemented scalable backend workflows to manage scheduling, formatting, and publishing across social platforms.

TECHNICAL PROFICIENCIES

Languages: Python, Java, C/C++, SQL, JavaScript, HTML/CSS, OCaml, Dart

Libraries/Frameworks: Pandas, NumPy, Scikit-learn, TensorFlow, Flask, Django, NLTK, Matplotlib, Seaborn, Tableau

Tools: Git, Docker, Google Cloud Platform, AWS, Oracle, PostgreSQL, VS Code, Jupyter, Excel

Skills: Backend Engineering, Data Engineering, Machine Learning, API Design, Data Visualization, Cloud Systems