Omar Fargally

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Education

Colgate University Hamilton, NY

Bachelor of Arts in Computer Science, Minor in Linguistics *Aug 2021 – May 2025*

- Deans Award for Academic Excellence (Multiple Semesters) | GPA : 3.55

Technical Skills

Languages & Tools: Java, C#, Python, JavaScript, TypeScript, SQL, HTML/CSS, Docker, AWS, Git, GitHub, CI/CD, Render, Heroku
Frameworks & Libraries: React, Node.js, Express.js, FastAPI, Pandas, PyTorch, NumPy, PostgreSQL, MongoDB

Experience

Software Engineer Intern May 2024 – Aug 2024

Ozeki Technologies (Techstars NYC '24) *Mill Valley, CA (Remote)*

- Developed full-stack legal playbook automation platform using React, Node.js, MongoDB, and Docker, deploying on Render for scalable production delivery, securing $200,000+ in seed funding through demonstrated product-market fit
- Built RESTFul APIs using Node.js & Express.js for a Clause Builder feature to parse uploaded legal contract PDFs and extract legal contract clauses, reducing manual data entry and accelerating 80% of the clause extraction process
- Integrated Google Docs API with OAuth 2.0 authentication to allow clients to track legal contract negotiation changes and manage clause revisions through the Ozeki platform, reducing negotiation cycle time by 2 days per contract
- Engineered GPT-powered assistant prototypes using OpenAI API and LangChain for prompt chaining, logging, and persistent memory, achieving a 75% classification accuracy in predicting negotiation clause priorities

Data Science Research Intern May 2023 – Aug 2023

Colgate University, Department of Computer Science *Hamilton, NY (Hybrid)*

- Rebuilt existing code-base for online experiments from Ibex to PCIbex using research-specific JavaScript libraries, improving cross-browser and cross-device reliability and accelerating future experiment development by 1.7x
- Automated data processing of 800,000+ rows from 850+ participants using standardization, normalization, and anomaly detection, resulting in high-quality datasets for subsequent analysis using Bayesian and linear-mixed effect models

Game Developer Intern May 2022 – Aug 2022

Colgate University, Ho Tung Visualization Lab *Hamilton, NY (In-person)*

- Developed character controllers, ball mechanics, and realistic bounce physics in Unreal Engine 5 for a 2v2 Mesoamerican ball game, optimizing engine performance, shader rendering and reducing average frame time from 16 ms to 11 ms
- Deployed application to Lab's planetarium projector with VR integration and custom 360° camera views for immersive multiplayer sessions, boosting average user satisfaction scores from 7.5 to 9.0 based on post-visit surveys

Projects

Fin/ge - HackNYU 2025 | *React, TypeScript, FastAPI, CrewAI, Groq-API, MongoDB* [Vercel]

- Developed full-stack stock discovery platform with a team of 4, featuring JWT authentication & Bumble-style swiping UI
- Engineered LLM chat agents with CrewAI to provide key stock metrics with 92% contextual accuracy & sub-3s latency
- Integrated NewsAPI and Polygon API to fetch 20+ stock metric data while cutting API latency by 60% via caching
- Utilized MongoDB to aggregate data from 4+ financial APIs and securely store user logins and swiping preferences

Game Discovery Web App | *React, TypeScript, Chakra UI, Jest, Zustand* [Vercel]

- Implemented 25+ reusable React components with filtering and search features based on genres and platforms
- Optimized state management with Zustand, eliminating prop drilling and leading to a 10% faster render time
- Streamlined data fetching and caching with React Query, reducing load times by 75% and data usage by 15%

Instrument-Classifier - ML Pipeline | *Python, PyTorch, Scikit-learn, NumPy, Pandas, Librosa, Optuna* [GitHub]

- Trained CNNs & Transformers on MusicNet data for multi-class, multi-label classification with 78% F1 score
- Consolidated 120 instrument types into 12 classes using MFCC feature extraction, increasing training efficiency by 35%
- Employed Optuna's Bayesian optimization for hyper-parameter tuning, boosting the F1 score from 57% to 78%

WaldoUnchained - Shooter Game | *Unity, C#, OOP, Game Design* [itch.io]

- Developed multi-mode shooting system, integrating bullet spread, recoil animations, and sound effects with UI updates
- Utilized finite state machines to implement path-finding, patrolling, and auto-shooting behaviors for AI enemy agents
- Developed character motor and FPS controller with sub-20ms input lag, enabling smooth player movement & jumping