Benjamin Sinek

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EDUCATION

Georgia Institute of Technology   Atlanta, GA
B.S. in Computer Science - Artificial Intelligence, Machine Learning, HCI   *Expected May 2027*

EXPERIENCE

Independent Research Intern   Aug 2023 – Jun 2024
Mentored by Gezim Gashi & Dr. Chris Mattmann (NASA Jet Propulsion Laboratory)   *Los Angeles, CA*
- Built an end-to-end real-time ML pipeline in Python/TensorFlow for facial emotion detection and emotion-aware music recommendation using Spotify audio features, aimed at reducing driver distraction
- Trained a custom TensorFlow CNN for 5-class facial emotion recognition ($\sim$80% validation accuracy over 50 epochs)
- Engineered emotion-to-song mapping using Spotify audio features (31 features) across a 20K-song dataset

Data Engineer (Contract)   May 2022 – Aug 2022
Bud ADU (Early-Stage Clean Energy Startup)   *Los Angeles, CA*
- Led field data operations for an 11-person team by building an Excel-based tracking system to manage survey coverage, prevent duplicate work, and standardize survey and work-hour tracking across regions
- Developed Python/pandas ETL pipelines to clean and consolidate 2,000+ surveys, automating daily updates and saving $\sim$5–8 hours of manual data cleaning per week while generating metrics used in investor meetings

PROJECTS

Developer Portfolio | *React, Django REST, PostgreSQL, Tailwind CSS, Vercel, Railway*   Sep 2025 – Feb 2026
- Built a decoupled full-stack application with a React frontend, Django REST API, and PostgreSQL relational database to manage structured project, skills, and experience data, deployed via Vercel and Railway
- Implemented REST API endpoints and dynamic data pipelines, and developed a responsive, state-driven React UI using Tailwind CSS and Framer Motion

Adversarial Game-Playing Agent | *Python, NumPy*   Nov 2025
- Designed an autonomous agent for a competitive game with hidden trapdoors, using Bayesian belief updates to maintain probability distributions over trap locations from noisy in-game signals
- Implemented a heuristic-based state evaluation function using 15+ engineered features (mobility, territory via flood-fill, risk, spawn-blocking) with feature weights optimized via genetic self-play
- Selected actions using beam search (depth 4, beam 6) with opponent modeling and engineered a search-context cache that reduced overall computation time by $\sim$85%, enabling deeper lookahead

TravelSmart | *Django, Python, JavaScript, Google Maps API, HTML/CSS, Agile/Scrum*   Jan 2025 – May 2025
- Served as Product Owner for a 4-person Scrum team, defining feature requirements and coordinating development across core platform features
- Built an interactive itinerary planner with drag-and-drop functionality and dynamic trip cost calculations using JavaScript
- Implemented a Django-based announcements system enabling administrators to broadcast platform-wide updates

Breakout Trading Algorithm | *Python, NumPy, QuantConnect*   Jan 2022 – Mar 2022
- Designed a volatility-adjusted breakout strategy on SPY using dynamic lookback windows based on market volatility
- Implemented entry logic on price breakouts with trailing stop-loss exits for automated risk management
- Backtested the strategy on 3 years of historical SPY data to evaluate performance and trade behavior

TECHNICAL SKILLS

Languages: Python, Java, C, JavaScript, SQL
Data Science & Machine Learning: NumPy, pandas, scikit-learn, TensorFlow, Keras, Matplotlib
Full Stack: React, Django, Django REST Framework, Node.js, Vite, Tailwind CSS, HTML/CSS
Tools & Platforms: Git, Vercel, Railway, PostgreSQL

LEADERSHIP

Eagle Scout, Boy Scouts of America