Jonathan Gil

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Education

Georgia Institute of Technology – Atlanta, GA (GPA: 3.4/4.0) May 2027

- *Bachelor of Science in Computer Science: Info/Internetwork-Intelligence*
- Coursework: Data Structures and Algorithms, Design and Analysis of Algorithms, Machine Learning, Systems and Networks, Introduction to Database Systems, Objects and Design, Linear Algebra

Skills

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

Frameworks and Technologies: Flutter, .NET, FastAPI, Firebase, TensorFlow, Docker, Git/GitHub, Android Studio, VS Code, IntelliJ

Concepts: Machine Learning, Deep Learning, Algorithms, Systems Design, Database Management

Experience

RoboInvesting Subteam Member - Data Science at Georgia Tech Aug 2025 - Present

- Developed a modular Python backtesting engine to simulate algorithmic trading strategies (e.g., SMA crossover), automating data ingestion, trade execution, equity tracking, and performance visualization.
- Integrated realistic trading mechanics including slippage, commission fees, position sizing based on capital and risk-per-trade, and dynamic stop-loss exits to control drawdowns.
- Enhanced risk-adjusted decision-making by integrating portfolio capital management, trade logging, and risk metrics into the strategy loop.

Undergraduate Research Assistant - GT Automated Algorithm Design Jan 2025 – Present

- Reduced inference latency by 60% and cut API costs by $4,000 annually by deploying FastAPI batching system for Mixtral-8x7B, enabling concurrent request handling.
- Achieved greater accuracy than traditional ML models like Logistic Regression by leveraging NSGA-II selection and optimizing 92 generations, enabled through automated ML design on the Titanic dataset.
- Facilitated 5 Monte Carlo trials to evaluate and score algorithm performance by enabling a local computer to function as a worker process within an evolutionary framework via a server connection through SQL.

Projects

Toxic Sentiment Analysis | *Python, nltk, sklearn* Aug 2025 – Dec 2025

- Built an end-to-end toxicity detection pipeline on 45K+ in-game chat messages using NLP preprocessing (TF-IDF, lemmatization, stopword removal) to classify toxic vs. non-toxic language.
- Engineered comparative NLP modeling study, showing TF-IDF lexical signals outperform temporal features for toxicity detection, with Logistic Regression achieving 93% accuracy and 0.97 ROC-AUC.

BuzzString | **buzzstring.org** | *Flutter, Dart, Google OAuth, Firestore* Aug 2025 – Oct 2025

- Deployed a full-stack web app for Georgia Tech's badminton club, serving 90+ active users who submit and track racket stringing requests in real time.
- Implemented Google Sign-In (v6.3.0) and Firebase Firestore to manage stringing specifications, history, and live service status updates.

Buzz Brief | *Python, React Native, Expo Go, Supabase, FastAPI* Sep 2025

- Created a React Native mobile app that transforms Gmail inboxes into a TikTok-style feed, with swipeable, cached clips generated from daily emails.
- Programmed a FastAPI + Supabase backend with secure Gmail OAuth and agentic LLM pipelines (OpenAI GPT-3.5, TTS, FFmpeg) to summarize emails and produce short videos.

DermaScan | *Python, TensorFlow, Streamlit* Feb 2025

- Launched an interactive web application that analyzes skin images and provides diagnostic insights, integrating a Streamlit-based interface for live predictions and enhanced accessibility.
- Accomplished 91% accuracy in classifying skin lesions by training a Convolutional Neural Network on 10,000 images from the HAM10000 dataset.