

# Jonathan Gil

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## Education

### Georgia Institute of Technology – Atlanta, GA

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:** C/C++, Python, Java, 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

### Undergraduate Researcher - GT Automated Algorithm Design

Jan 2025 – Present

- Minimized error by 20% and optimized model complexity by implementing genetic programming and multi-objective optimization, including symbolic regression, by utilizing the DEAP Python library.
- Achieved greater accuracy than traditional ML models by leveraging NSGA-II selection and optimizing 92 generations, enabled by automating the machine learning algorithm 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.

### Software Engineer - GT RoboJackets RoboCup

Aug 2024 – May 2025

- Integrated multi-agent adversarial strategies and enhanced motion planning algorithms for six autonomous soccer robots using C++ and ROS2 in an Agile team.
- Improved decision-making efficiency in the stack by optimizing robotic strategy through dynamically adjusting behavior in simulation using rqt.

## Projects

### 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 80+ 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 | React Native, Expo Go, Supabase, FastAPI, Python, FFmpeg

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 80% accuracy in classifying skin lesions by training a Convolutional Neural Network (CNN) on 10,000 images from the HAM10000 dataset.

### WanderSync Navigation App | Java, Firebase, MVVM

Aug 2024 - Nov 2024

- Built an Android navigation app that provides seamless real-time location tracking, leveraging MVVM and Firebase for scalable, real-time user collaboration.
- Enabled dynamic user invitations for shared access by engineering a secure user authentication system and enabled real-time collaboration.