

# Abdullah Altaweel

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## Education

**Georgia Institute of Technology | Atlanta, GA**

Bachelor of Science in Computer Science: People and Media Concentration

August 2020 – Present

Expected Graduation: Aug 2024

## Experience

**Georgia Tech Undergraduate Research Intern | Atlanta, GA**

May 2022 - Present

*GT Glacier Geophysics*

- Worked as a student researcher developing software tools for Ph. D students and professors in the School of Environmental and Atmospheric Sciences.
- Digitized 200+ radar film data scans recorded in the 1970s by detecting ice-sheet surfaces and beds and interpreting their thickness via pixel-to-meter models.
- Training AI to detect important artifacts within images using computer vision and machine learning (YOLOv8).
- Achieved runtime optimization gains (from 120sec to 30sec per image on average) and maintained code documentation.

## Projects

**Rate My Songs**

Fall 2023 - Present

*Team Lead, Georgia Tech CS Junior Design Capstone Project*

- Leading the design and implementation of a live music streaming and music making application on iOS and Android.
- Implemented REST APIs for backend communication between React Native frontend and MongoDB backend.
- Designed efficient and real-time communication using web sockets for responsive client-server messaging.
- Implemented real-time payment processing using Stripe APIs and webhooks for app monetization.

**Stock Portfolio Forecaster**

Fall 2023 - Present

*Personal Project*

- Developing a statistical and machine learning model (ConvLSTM) that forecasts stock prices of a set of companies.
- Combined the results to generate an ensemble time-series result with minimal error with the validation data.
- Able to forecast results 60 days in the future and quantify risk and confidence intervals using Monte Carlo simulations.

**AI ATL Hackathon Participant**

Fall 2023

*Generative Image AI Developer*

- Worked on creating a generative image model to create educational visual aids for complex AI research topics.
- Collected a custom dataset using Anthropic's API to get keywords to use for web-scraping for educational images.
- Finetuned and trained a stable diffusion model from HuggingFace by deploying it on a high-performance Google Cloud server.

**DRY**

Fall 2022

*Team Lead, GT Videogame Development Club*

- Developed a horror game in Unreal Engine 5 during the semester with 15 team members.
- Brainstormed game mechanics and iterated over 5 level designs to balance emotional impact and game fairness.
- Integrated 3 AI state modules for enemy behavior and implemented custom props and puzzle mechanics.
- Maintained version control for collaborative work by tracking development and stable versions across team members.
- Managed weekly sprint meetings with team members to ensure a playable build by the project deadline.

## Relevant Coursework

- **Objects and Design:** Learned Object-oriented design and programming and common good programming practices. Additionally utilizing industry tools and practices such as Scrum, Agile, GRASP and SOLID for scalable and collaborative software design and implementation.
- **Data Structures and Algorithms:** Implemented data structures such as Graphs, Trees (AVL, 2-4, Heaps), Hashmaps and Linked-lists along with algorithms such as Binary Search, BFS, DFS, Dijkstra's, and pattern matching including KMP, Boyer-Moore and Rabin-Karp.

## Skills

**Programming:** C++, C, C#, Java, Python (OpenCV, Numpy, Pandas, SciKi-Learn, Keras, TensorFlow, Statsmodels), Javascript (NodeJS, ExpressJS), React Native, MongoDB, Web sockets (Socket.IO), Stripe

**Software:** Visual Studio, Git/GitHub, Perforce (P4V), Jira, Trello, Unreal Engine 5, Unity, Blender, Figma

**Languages:** English, Arabic