Abdullah Altaweel

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Education

Georgia Institute of Technology | Atlanta, GA *August 2020 – Present*
Bachelor of Science in Computer Science: People and Media Concentration *Expected Graduation: May 2024*

Experience

Georgia Tech Undergraduate Research Intern | Atlanta, GA *May 2022 – August 2023*
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.
- Split and assigned tasks to 5 other team members while accounting for potential absences and emergencies.
- Using project management tools such as Jira and Trello to schedule sprints utilizing the Agile Scrum framework.
- Designed and implemented app ~10 interaction prototypes using Figma and tested their usability with Maze.

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