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, June 2024

Skills

Programming: C++, C, C#, Java, Python (OpenCV, Numpy, PyTorch/Torchvision)
Software: Unreal Engine 5, Blender, GitHub, Photoshop, Unity, Cinema 4D
Languages: English (fluent), Arabic (native)

Experience

Georgia Tech Undergraduate Research | Atlanta, GA *May 2022 – Present*
GT Glacier Geophysics

- Constructed software tools for researchers working on analyzing changes in glacier and ice sheet thicknesses.
- Digitized radar film data by detecting ice-sheet surfaces and beds and interpreting their thickness via pixel-to-meter models.
- Achieved runtime optimization gains (from 120sec to 30sec per image average) and maintained code documentation.
- Training AI to detect important artifacts within images using computer vision and machine learning (OpenCV/ PyTorch).

Projects

ICED *Spring 2023 - Present*
Lead Developer, Personal Project
Developed a horror experience in Unreal Engine 5 with a focus on AI behavior and adaptive gameplay attributes.

- Implemented multiple behavior trees for different agents that communicate with each other to find the player.
- Constructed reactive AI states depending on nearby smart objects, player interaction, and AI memory (blackboard).
- Designed AI decision-making based on environmental queries, perception (sight/hearing), and utility scores.

Project Obelisk *Spring 2023*
Game Design/Art, GT Videogame Development Club
Contributed to game design and asset creation for an isometric fast-paced action shooter.

- Iterated on weapon design and character models based off player feedback and readability.
- Play tested and provided feedback integration for each game build to ensure enjoyable gameplay.
- Received the VGDev Deleonic Award out of ~50 team members of for exceptional and consistent work with the team.

DRY *Fall 2022*
Team Lead, GT Videogame Development Club
Developed a horror game in Unreal Engine 5 during the semester with 20+ team members.

- Brainstormed game mechanics and level design to balance emotional impact and game fairness.
- Integrated AI state modules for enemy behavior, props, and puzzle functionality using UE-blueprints and C++.
- Managed weekly sprint meetings with team members to ensure a playable build by the project deadline.
- Maintained version control for collaborative work by tracking development and stable versions across team members.

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.

Activities

UT: Austin | Austin, TX *June 2021 – July 2021*
Summer Research Practicum

- Worked on performing small-scale research prototypes and techniques, using the same methods used in peer-reviewed published research.