Yueying Liu

781-244-7784| liuyueying966@gmail.com

EDUCATION

University of Massachusetts Lowell (GPA: 3.8/4.0) *Lowell, MA, Sep 2017 - May 2022*

Degrees: Master of Science in Computer Science

Bachelor of Science in Computer Science, Minor in Mathematics

Relevant courses: Machine Learning, Data Mining Topics: Mining of massive data, Artificial Intelligence, Database, Computer graphics, Computer architecture, Organization of programming languages, Assembly programming language, GUI, Foundations of Computer Science

SKILLS

- **Coding:** Python (Pandas, PyTorch, multiprocessing, TensorFlow, etc.), C/C++, HTML, CSS, JavaScript, R, Java, SQL, etc.
- **Tools:** MS Office, MS SQL Server, MySQL, R Studio, AWS, Linux, Visual Studio, Neo4j, PyCharm, Java IDE, git, Jupiter, Unreal Engine 5, Blender, Github, etc.
- **Languages:** Chinese (Mandarin), English

EXPERIENCE

Researcher Assistant *Mar 2021 – July 2023*

University of Massachusetts Lowell Department of Civil and Environmental Engineering

- **Interpreted Waymo Automatic Driven Vehicle motion dataset** and decoded Parse Waymo open motion dataset to pre-process the data source for the purpose of preparing customized data sets capable of behavior **classification of AI-driven vehicles**.
- Generated artificial data points by adapting to **a customized generative adversarial networks machine learning model** in **Python** to enrich data pools that consist of insufficient necessary interest points in the end serve as the backend of a **website developed with HTML and JavaScript.**
- **Implemented graphical data visualization** in the form of traffic simulation videos generated from processed datasets to revert original traffic scenarios, fundamentally assist researchers to observe analysis accuracies.
- Constructed **classification** parameters utilizing machine learning techniques to distinguish AI-driven vehicles from human-driven vehicles, eventually provide the fundamentals for interpreting the most impactful attributes that express the similarities in AI driving and human driving.
- Participated in the implementation of a **reinforced learning AI** that is responsible for vehicle following, specifically built **parallel training capabilities**, **AWS** training environment for the AI, and developed a part of AI parameters, ultimately created the foundation of AI project development.

PROJECT

Topdown Autoshooter Game Project *Jan 2024 - Present*

- Implemented **the Infrastructure of the Gameplay Systems and Frameworks** using **C++** and **Unreal Engine 5**.
- Created customized **dynamic interfaces** for player interaction and object manipulation in the game world.
- Built a comprehensive inventory and equipment system for game character using Unreal Engine.
- Designed Game scenes, character stories, reusable asserts, user interfaces, 3D models, and maps.
- **Filmed Game Cutscene** with Unreal Engine 5 and **created Game Contents** and quests.

Research Project on Puerto Rican Health Study *Jan 2020 – Dec 2021*

- Implemented fundamentals of **graphics embedding** for knowledge graph implementation, providing the infrastructure of designing a **disease prediction machine learning model**.
- **Generated knowledge graph** for medical record entries to produce artificial entries for missing indispensable fields, to ensure data integrity and completeness.
- Designed nodes and edges of the knowledge graph utilizing **Neo4j** to encompass the capability of defining association relationships within the graph.

Prostate cancer grade project *Mar 2022 – May 2022*

- Preprocessed source image of prostate tissue to satisfy the parameter requirements of the machine learning model.
- Conducted **image classification** by adopting a **convolutional neural network model** to assist medical diagnosis of prostate cancer.
- Demonstrated the project results to the audience as the team leader and structured workload into coherent chunks for teammates to digest.

Gomoku Game with Adjustable AI Difficulties *Sep 2020 – Dec 2020*

- Implemented Gomoku base game to enable local multiplayer game mode while setting the environment for AI utilizing **pygame library**
- Developed Gomoku AI to accomplish solo gameplay capabilities facilitating the **Mini-Max algorithm**
- Achieved AI difficulty adjustment ability to allow enjoyment for players with different skill levels through adjusting tree search depth
- **Optimized game performance** to avoid game interruption due to higher game tree search depth