Zhongqian Duan

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Education

University of Michigan - Ann Arbor   Aug. 2022 – Dec. 2023 (Expected)
M.S.E. in Computer Science and Engineering   Ann Arbor, MI

University of Michigan - Ann Arbor   Aug. 2020 – May 2022
B.S.E. in Computer Science   Ann Arbor, MI
- Major GPA 3.98 / 4.0 | Honors: Dean's List, University Honors, James B. Angell Scholar
- A/A+ Courses: Operating Systems, Database Management Systems, Machine Learning, Computer Vision, Computer Game Design and 9 others

Shanghai Jiao Tong University   Sep. 2018 – Aug. 2022
B.S.E. in Electrical and Computer Engineering   Shanghai, China
- Major GPA 3.71 / 4.0 | Honors: Outstanding Student Scholarship of SJTU

Internship Experience

NIO - Autonomous Driving System   May 2021 – Aug. 2021
Research Intern   Shanghai, China
- Participated in the design and optimization of a 3D Object Tracking Network for autonomous vehicles.
- Participate in the NIO black-box project (testing autopilot with on-screen video). Designed and trained a light-weight CNN with different backbones in PyTorch to remove lens distortion effect from videos.

Research Experience

An Improved Method for Full High Definition Demoiréing   Fall 2021
Independent research, advised by Dr.Jiong Chen   🐙 HR-Demoire
- Proposed *netEdge* in the Demoire step to predict the edge of moire-free images and reinforce the base network in low-resolution
- Proposed a image processing pipeline to utilize a pre-trained low-resolution network to high-resolution images: Downsample → Demoiré → Detail Restoration from high-resolution. (reduce PSNR by 5%)

Projects

AR Game: FantasyAR   May 2022 – Aug. 2022
Capstone Peoject | SJTU   🐙 FantasyAR
- Developed a location-based AR game with voice control (a full stack Android App) using Unity.
- Designed and implemented the UI/UX for the shop and battle scenes, and implemented a back-end server with a database to store both the player and monsters' information.

3D Horror Game: Asylum 7   Feb. 2022 – Apr. 2022
Capstone Project | UMich   🔗 Asylum 7 🎮 Game Portfolio
- Developed a first-person horror and escape game with multi-levels using Unity, and participated in the UM + EMU Game Design Showcase 🔗
- Implemented the core features of the game with C#, including task management, enemy AI and navigation, and controls of trap.

Operating System Project   🔗 OS project
- Implemented a thread library with thread, cv, mutex / a virtual memory manager / a network file server.

Database Project - Fakebook   🐙 DB project
- Designed a database to store information for the fictional social media platform Fakebook, built a Java application that executes SQL, and implemented a database structure – Grace hash join.

Generative Approach for Image Colorization   🐙 CV project
- Proposed a generative adversarial network (GAN) for the image colorization task, and investigated the efficiency and effect of GAN in colorization compared with a traditional CNN.

Skills

Programming Languages: C/C++, C#, Python, Java, MATLAB
Tools and Frameworks: Git, Pytorch, TensorFlow, LaTeX, MongoDB, MySQL, Mathematica, Unity, Arduino