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.
- Designed and trained a light-weight CNN 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 (DR).
- Designed and optimized a two-stage network with squeeze-and-excitation (SE) block in the DR step to learn the demoiré effect while restoring the image's details in high-resolution. (reduce PSNR by 5%)

Projects

AR Game: FantasyAR May 2022 – Aug. 2022
Capstone Peoject | SJTU FantasyAR

- Developed a location-based AR game (a full stack Android App) with voice-controlled skills using Unity.
- Designed and implemented the UI/UX for the shop and state scenes where player can purchase, equip or change items.
- Implemented a back-end server and a database for monsters' information, which can communicate with the front-end to place and record monster at specific places based on GPS.

3D Horror Game: Asylum 7 Feb. 2022 – Apr. 2022
Capstone Project | UMich Asylum 7

- Developed a first-person horror and escape game with multi-levels using Unity.
- Iterated the game design with several versions (alpha, beta, gold) and participated in the UM + EMU Game Design Showcase
- Implemented the core features of the game, including task management, enemy AI and navigation, and controls of trap with C#.

Operating System Project OS project

- Implemented a thread library with thread, cv, mutex / a virtual memory manager / a network file server.

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