CHONGYU WANG

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EDUCATION

Zhejiang University (ZJU) *Sept. 2018 – Jul. 2022*
Electronics and Computer Engineering—Bachelor of Engineering
University of Illinois at Urbana-Champaign (UIUC) *Sept. 2018 – Jul. 2022*
Computer Engineering—Bachelor of Science
University of Illinois at Urbana-Champaign (UIUC) *Aug. 2022 – Dec. 2023*
Master of Computer Science (MCS)

PUBLICATION

Tianyu Liu, **Junyu Chang**, **Chongyu Wang**, Liangjing Yang, *Specular Reflections Detection and Removal Based on Deep Neural Network for Endoscope Images*, accepted by *2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC). doi: https://doi.org/10.36227/techrxiv.16918234.* (Poster)

RESEARCH EXPERIENCE

Specular Reflections Detection and Removal Based on Deep Neural Network for Endoscope Images
Instructor: Prof. Liangjing Yang *Mar. 2020 – Jul. 2021*

- Aimed to detect and restore specular reflections caused by metal instruments or smooth tissue membrane during surgical operations based on Deep Neural Network.
- Proposed a novel model based on the deep learning framework, Surgical Fix Deep Neural Network (SFDNN), to detect the reflection points in a surgical video. Used the time series scheme to repair the reflection, restoring the real surgical scene.

Knowledge Extraction and Retrieval of Diesel Engine Event Report in Nuclear Power Plant Based on Natural Language Processing *Mar. 2020 – Jul. 2021*
Project leader of this National Student Research Training Program, Instructor: Prof. Hongwei Wang

- Built a nuclear corpus based on the diesel-related event reports provided by Qinshan Nuclear Power Station.
- Proposed a novel statistics-based key-phrase extraction model, which performed well on Chinese diesel-related event reports.
- Built a document retrieval system based on the event reports provided by Qinshan Nuclear Power Station.

WORK EXPERIENCE

Teaching Assistant *Sept. 2021 – Dec. 2021*
Teaching Assistant in Computer Systems & Programming Course

- Working with Prof. Pavel Loskot and Prof. Steve Lumetta

PROJECT EXPERIENCE

Bomberman Game Based on FPGA *Aug. 2020 – Jan. 2021*
Digital Systems Laboratory Course Final Project, Instructor: Prof. Chushan Li

- Used Intel FPGA development board and Quartus to develop Bomberman, a two-player online game.
- The main logic of the game and interfaces was written by SystemVerilog. The main logic was implemented by state machine, and interfaces included voice interface, wireless remote-control interface, keyboard interface.

The Basic Implementation of Operating System based on x86 architecture *Jan. 2021 – May. 2021*
Computer Systems Engineering Course Final Project, Instructor: Prof. Steven S. Lumetta

- Implemented the real-time clock (RTC) and its virtualization, created a terminal driver to handle the keyboard input, wrapped System Call, allocated memory and implemented paging, including initialization of paging and mapping the virtual and physical address during scheduling.

X-reality Interface for Human-robot Interaction *Mar. 2022 – May. 2022*
Senior Design Project, Instructor: Prof. Liangjing Yang

- Designed a mixed-reality human-robot interaction system, including a Hololens2 (MR glasses), a Turtlebot3 (robot), and an open manipulator. Wrote the C# scripts in Unity and dealt with the message transfer between Unity and ROS to allow users to control the Turtlebot3 robot using Hololens2. See more about this project: **ECE 445 ZJUI**; **VIDEO**

TECHNICAL SKILLS

Programming Language: Python, C, C++, C#, HTML, SQL, x86 Assembly, System Verilog.
Tools & Platform: CUDA, Pytorch, Git, Docker, Unity, Linux, VS Code, MATLAB
Frameworks: ROS, Pandas, Numpy, OpenCV, Scikit-learn
Relevant coursework: Data Structures, Algorithms, Operating Systems, Parallel Programming, Digital System, Machine Learning, Natural Language Processing, Data Mining