

# WANG, Chongyu

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## EDUCATION BACKGROUNDS

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**Zhejiang University (ZJU)** 2018.9-2022.7  
Electrical and Computer Engineering—Bachelor of Engineering  
Curriculum GPA: 3.74/4.00

**University of Illinois at Urbana-Champaign (UIUC)** 2018.9-2022.7  
Electrical and Computer Engineering—Bachelor of Science  
Curriculum GPA: 3.74/4.00

## PUBLICATION

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Liu Tianyu, 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)**.

## RESEARCH EXPERIENCES

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**Specular Reflections Detection and Removal Based on Deep Neural Network for Endoscope Images**  
*Instructor: Prof. Liangjing Yang* 2020.3-2021.7

- 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 deep learning framework, known as Surgical Fix Deep Neural Network (SFDNN).
- Designed and modified a deep neural network model to detect the reflection points in a surgical video.
- Used the color mapping method to repair the reflection part, restoring the real surgical scene.
- A paper of this work has been submitted to 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), under review.

**Knowledge Extraction and Retrieval of Diesel Engine Operation Report in Nuclear Power Plant Based on Knowledge Graph** 2020.3-present

*Project leader of this National Student Research Training Program, Instructor: Prof. Hongwei Wang*

- Collated the information forms and field characteristics of the diesel-related event reports provided by Qinshan Nuclear Power Station and constructed a nuclear corpus.
- Identified named entities for keyword information such as fault type, location, equipment, cause and consequence of the event reports to form a knowledge base of entities; and sorted out relationships and attribute features for the entities to form a knowledge system.
- Working on an algorithm to generate a knowledge map based on historical information such as events as well as status reports that can extract entities from new events and establish direct relationships and attribute characteristics of different entities.
- Plan to test the accuracy of the knowledge graph with a test set and to continuously optimize it.
- Plan to build a search engine system for events related to diesel engines in nuclear power plants based on the knowledge graph model, including input interface, knowledge graph visual display, event retrieval and result output.

**Bomberman Game Based on FPGA** 2020.8-2021.1

*ECE 385 Course Final Project, Instructor: Prof. Chushan Li*

- Used Intel FPGA development board and Quartus to develop a Bomberman game.
- Wrote the logic of the game via the state machine by SystemVerilog.
- Implement the voice interface, wireless remote-control interface, keyboard interface, and two players online support.

**The Basic Implementation of Operating System based on x86 architecture** 2021.1-2021.5

*ECE 391 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, and allocated memory and implement paging, including initialization of paging and map the virtual and physical address during scheduling.
- For more details of our work: [https://gitlab.engr.illinois.edu/ece391\\_sp21/mp3\\_group\\_12](https://gitlab.engr.illinois.edu/ece391_sp21/mp3_group_12)

## **HONORS AND AWARDS**

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Second Prize of The 12th Chinese Mathematics Competitions	2020.12
Second Prize of The 11th Chinese Mathematics Competitions	2019.12