Ziwei Jiang

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Education

Ph.D. Computer Engineering, Purdue University, West Lafayette, IN Aug 2018 – Present

B.S. Computer Engineering; Mechanical Engineering,
Southeast Missouri State University, Cape Girardeau, MO Aug 2013 – Dec 2017

Research Experience

SMART (Space-based Machine Automated Recognition Technique) Program – IARPA May 2021 – Present

Research Assistant -- Robot Vision Lab, Purdue University

- Developed super-resolution with GAN for satellite image up sampling
- Explored radiometric normalization with neural style transfer approach
- Applied neural network-based key-point detection and matching for image alignment

COVID-19 Disinfection with Autonomous Robot -- Botzee Jan 2021 – Present

Research Assistant -- Robot Vision Lab, Purdue University

- Built program for indoor 3D SLAM with an RGB-D camera
- Developed an algorithm for building the heat-map for UV disinfection area
- Developing an algorithm for Indoor 3D reconstruction of glass objects based on GAN

CORE3D (Creation of Operationally Realistic 3D Environment) Program – IARPA Jan 2019 – May 2020

Research Assistant -- Robot Vision Lab, Purdue University

- Developed roof modeling algorithm to fit point cloud with parametric models
- Adapt convolutional neural network to model the building cluster with multiple parametric models
- Designed modeling segmentation algorithm for the building cluster from the satellite images

Drone Navigation Based on Human Detection May 2017 – Aug 2017

Research Intern -- Intelligent Systems and Assistive Technologies Lab, Purdue University

- Programmed a drone to detect and hovering above the patient lying on the ground
- Modified a deep neural network detection algorithm to adapt to the project
- Deployed the Kernelized correlational filter algorithm to tracking the target
- Designed a program pipeline to use the neural network to correct the tracking result periodically

Department of Physics and Engineering Physics, Research Intern May 2016 – Aug 2016

Southeast Missouri State University

- Recorded Electrocardiography signal with data acquisition device
- Designed an analog circuit with filters and amplifiers to obtain clean waveform
- Applied digital filter and wavelet transform method and examine the effects
- Presented Poster presentation at MAPT Conference with the research result
- Presented Oral presentation at 25th Annual Student Research Conference

Motion Controlled Robotic Arm, Capstone Project Jan 2016 – May 2017

Southeast Missouri State University

- Designed a 6 degree of freedom robotic arm to simulate a human's arm motion
- Designed protocol for the communication between microcontroller and computer
- Wrote a program to detect the human skeleton and to track arm motion with the Kinect

Work Experience

Teaching Assistant, School of Electrical and Computer Engineering Jan 2021 – May 2021

Purdue University

- Designed exams for the computer security course
- Held office hours every week
- Designed the rubric for the discrete math course
- Wrote a script for automating the grade entering process

Undergraduate Teaching Assistant, Computer Science Department Jan 2017 – Dec 2017

Southeast Missouri State University

- Assisted in the lab session of the data structure course
- Graded quiz, assignments, and projects
- Held a tutoring session once a week