Jiaxin Zhang

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Education

Boston University, College of Engineering — Boston, MA
Master of Science in Electrical and Computer Engineering (Robotics Specialization) — May 2020 Exp.

University of Science and Technology of China — Hefei, China
Bachelor of Science in Physical Electronics, School of the Gifted Young — June 2018

Experience

Research Assistant, University of Notre Dame, Notre Dame, IN — Summer 2017
- Implemented and processed all experiments data.
- Explored and designed Binarized algorithm for Deconvolution-Based Generators.

Teaching Assistant, Peking University, Beijing, China — Summer 2016
- Conducted weekly lectures in Calculus for an Economics course.

Research Assistant, National Tsing Hua University, Hsinchu, Taiwan — Spring 2016
- Conducted experiments and explored modelling for paper twisting patterns.

Projects

Robotic Arm Control in Gazebo, Boston, MA — Fall 2018
- Designed and Built a Robotic Arm with ROS in gazebo with a team of four.
- Implemented PCL and PointNet to process point cloud data for semantic segmentation.
- Implemented motion planning and control for the robot with Moveit.
- Integrated Alexa interface that allowed users to control Robotic Arm with their voice.

FPGA based BNN Acceleration, Hefei, China — Spring 2018
- Implemented Binarized Convolutional Neural Networks(BNN) in a FPGA device(Xilinx ZedBoard).
- Achieved 93% Accuracy on ASL FingerSpelling dataset.
- Achieved 70 frames/secs processing speed for a 9-layer-BNN within only 2.4W power supply.

PBGen, Notre Dame, IN — Summer 2017
- Explored and designed Partial Binarized algorithm for Deconvolution-Based Generators.
- Achieved 25x saving in memory and 1.9x speed up with little performance loss.
- Published as second author, see the paper at arxiv.org/pdf/1802.09153.

Eye Tracking System, Hefei, China — 2015 - 2016
- Designed and built a system with helmet, Lidar and camera that track the user's gaze point.
- Used infrared camera integrated in the helmet to catch eye's movements.
- Implemented sensor fusion algorithms for IMU and Vive Lighthouse to get the helmet's 6DoF.
- Controlled a Pan-Tilt Camera to follow the user's gaze point.
- Designed and built auto calibration system for the helmet and pan-tilt camera.

Skills

Programing Languages: Python, C/C++, MATLAB, LabVIEW
Developing Experience: ARM Cortex-M4 based on Kinetis K60, Xilinx ZedBoard
Others: Linux, ROS, PCL, Git, Makefile, Xilinx SDSoC and VivadoHLS