**Qingyuan Zhang (David)**

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**Education Background**

**University of California, San Diego, B.S. Computer Engineering GPA: 3.94**

* Junior, Class of 2022
  + Deep Learning, Recommender System, Data Structures and Object-Oriented Designs,

Digital signal/image processing, Analog design, Advanced Digital Design,

Computer Organization and Systems Programming, Signal and System Analysis, .

**Technical Skills**

* Pytorch, Tensorflow, Robotic Operating System (ROS), Git, Quartus Prime, and Unity
* ARM Assembly, SystemVerilog, C, C++, C#, Java, Python and MATLAB
* ESP8266, Raspberry Pi, Solidworks and Eagle PCB

**Activities**

* Student Intern, Summer Research Internship Program 2019 Jun. 2019 - Aug. 2019
  + Created project VR System Development for 3D Scene Visualization
* Member, ETA KAPPA NU Engineering Honor Society Feb. 2020 - present
* Student Intern, Summer Research Internship Program 2020 Jun. 2020 - Aug. 2020
  + Conduct simulation in Unity for developing a new computer vision platform
  + Created project 2D to 3D Lidar Mapping

**Projects**

* VR System Development for 3D Scene Visualization Aug. 2019
  + Improved an existing point cloud renderer in Unity.
  + Rendered point clouds in a Unity Scene.
  + Created scripts in C# that allows the users to edit the point clouds and save those changes.
  + Enabled user interaction with the renderer in VR using Oculus.
* Automated Smart Irrigation System ***IEEE Quarterly Project First Prize***  Dec. 2019
  + Designed and built circuits for a sensor network as well as a water pump.
  + Programmed an ESP8266 microcontroller to collect soil moisture and temperature data with senors.
  + Established wireless communication between the microcontroller and a remote server.
  + Automated the watering system based on sensor reading and server command.
* 2D to 3D Lidar Mapping Aug. 2020
  + Designed and built a hardware platform for rotating a 2D lidar.
  + Created a program that transforms a 2D coordinate to a 3D one using the rotation.
  + Established communication between the hardware platform and lidar through ROS.
  + Transformed the laserscan data to a .pcd format point cloud.
* LSTM Image Captioning Dec. 2020
  + Implemented an encoder for images using RESNET50 CNN.
  + Implemented a decoder for texts using embedding and LSTM in Pytorch.
  + Trained the model on COCO Image Captioning 2015 dataset.
  + Generated captions and evaluated model performance with BLEU-1 and BLEU-4 scores.