TIAN QIU

ECE Department, UC San Diego
(+1)858-349-2549 ⋄ tiq014@ucsd.edu

EDUCATION

M.S., Electrical Engineering, UC San Diego *Sep 2019 - Present*
Track: Communication Theory & Systems GPA: 3.95/4

B.Eng, Electrical Engineering, Australian National University *Jul 2017 - Jun 2019*
Thesis: Splitting receiver with joint coherent and non-coherent detection GPA: 6.125/7

B.Eng, Opto-electronics, Beijing Institute of Technology *Sep 2015 - Jun 2019*

RESEARCH INTEREST

Image and Video Processing, Video Coding

RESEARCH EXPERIENCE

360° Video Compression and Streaming over Wireless Link Sep 2019 - Present
UC San Diego

Supervisors: Prof. Pamela Cosman, Prof. Dinesh Bharadia
This project aims to reduce the bitrate requirement of 360° video streaming by only transmitting the viewport with the highest quality. Truncated square pyramid(TSP) projection, switching of front face, and viewport prediction are jointly used to achieve this target. The algorithm is simulated in MATLAB and tested with HEVC test model HM and FFmpeg.

MATLAB Simulation of Splitting Receiver(Senior Project) Jul 2018 - Jun 2019
Australian National University

Built Simulink model for a splitting receiver jointly using coherent detection and non-coherent detection for wireless communication systems. Tested the performance of the design with common modulation schemes and proposed possible modulation to exploit its advantages.

PROJECTS

Image Compression with Convolutional Autoencoder Apr - Jun 2020
UCSD ECE 285: Image and Video Compression

Re-implemented a classic work with Keras on high-resolution image compression with convolutional autoencoder. Used Principal Component Analysis(PCA) to further exploit information redundancy to achieve higher compression rate.

Foliar Disease Classification with Transfer Learning Apr - Jun 2020
UCSD ECE 228: Machine Learning for Physical Applications

Build a classifier for apple tree leave disease in Keras. Used transfer learning-based model with various pre-trained CNNs.

GRADUATE COURSES

Image Processing, Information Theory, Random Processes, Linear Algebra, Machine Learning, Image and Video Compression

SKILLS

Programming MATLAB, C++, Python, Shell Scripting
Software & Library HEVC, FFmpeg, Tensorflow, Keras

AWARDS

Meritorious Prize, Mathematical Contest in Modelling, 2016