

JIREN LI

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EDUCATION

Southwest Jiaotong University (SWJTU)

Sichuan, China

Bachelor of Science in Electronic Information Engineering

Sept. 2017 – July 2021

- Major Average Score: 90.44/100 | Ranking: 6/128
- **Relevant Coursework:** Data Structure and Algorithm Design, Principle and Application of Database, Information Theory, Discrete Math, Object Oriented Programming, Software Engineering, Operation System, Computer Network

RESEARCH EXPERIENCE

Southwest Jiaotong University Laboratory | Service Outsourcing Project

Sichuan, China

Surveillance Video Detection of Safety Helmets

Dec. 2019 – July 2020

- Designed a neuron network based on Faster RCNN to create object recognition for helmets and heads
- Recalculated scores of proposals in consecutive frames to optimize the accuracy with over 75% MAP
- Integrated an extensible software with Python to inform supervisor of any workers not wearing helmets

Southwest Jiaotong University Laboratory | Student Research Training Program (SRTP)

Sichuan, China

Intelligent Image Recognition Technology for Land Use Type

Mar. 2019 – Apr. 2020

- Designed a semantic segmentation model in U-Net for land usage classification in twelve categories
- Evaluated model with annotated land images from satellites, reaching 85% pixel accuracy and 80% mean pixel accuracy
- Embedded the network in an encapsulated recognition software, which was applied in the 3rd National Land Survey

Southwest Jiaotong University Laboratory | Personalized Experimental Project

Sichuan, China

Railway Catenary Pillar Number Recognition

June 2018 – Mar. 2019

- Implemented LeNet-5 with NumPy and evaluated the network with MNIST dataset
- Utilized Faster-RCNN based model with TensorFlow to create an End-to-End object detection system to recognize digits on the railway catenary pillars

SELECTED PROJECTS

Design of Video Fusion Method in Mixed Reality

Sept. 2020 – Present

- Applied Unity3D to create a digital room with a table and produced visualizations by Mixed Reality (MR)
- Captured video stream by OpenCV, and projected onto modeled table to facilitate interactions with users

Railway Information Management System

Apr. 2020 – June 2020

- Developed an interactive web application with C# and ASP.NET, and constructed a scalable database by Microsoft SQL Server to manage railway information
- Fulfilled the functions of modifying train information, user registration, and the purchase and refunding of tickets

PUBLICATIONS & PATENTS

- Jin Huang, **Jiren Li**, Jianwei Li, “UNet-based Land Use Type Image Recognition Technology and Application Research”, *Practical Electronics*, Under Review.
- Jin Huang, **Jiren Li**, Jianwei Li, Jianbo Li, Zhihong Zhang, Siyuan Zhang, 2020. “A Land Use Type Recognition Method based on U-Net Neural Network” CN Patent Application CN202011236409.5, Patent Pending

HONORS & AWARDS

- 1st Class Scholarship for Academic Excellence 2019 & 2018
- 2nd Class Prize in Sichuan Province, China Undergraduate Mathematical Contest in Modeling 2019
- 2nd Place, Programming Contest of Lan Qiao Cup 2019

SKILLS

- **Programming Languages:** C/C++, Python, Java, SQL
- **Tools & Platforms:** Linux, Git, SQL Server, ASP.Net, NumPy, OpenCV, TensorFlow, MATLAB