

# TzuKao Wang

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## EDUCATION

### University of California San Diego, Jacobs School of Engineering

Master of Electrical and Computer Engineering

San Diego, CA

March 2023

- **GPA: 4.0/4.0** (All A or Above)

- Coursework: Parallel Computation, Network System, Operating System, Computer Architecture

### Tsinghua University, School of Information Science and Technology

Bachelor of Engineering in Electronic Information Science and Technology

Beijing, China

June 2021

- Coursework: Object-oriented Programming, Data Structure, Database System,

## SKILLS

**Programming:** Java(4 years), Golang(2 years), C/C++(4 years), Python(3 years), JavaScript(2 years)

**Tools:** Git, AWS,GCP, Docker, Node.JS, RESTful, SQL, XSEDE, Kafka, MongoDB

## Experience

### NIULAB, Tsinghua University

Beijing, China

#### Research Development (Communication System Development)

Sep 2020 - Jun 2021

- Developed the communication infrastructure with C++ in Linux which enables 64 clients in a network.
- Solved collision problem by CSMA/CA with priority strategy to ensure the collision probability lower than 10% and assigned the central server to multi-threading process the network.
- Prevented malicious attack by implementing security access policy and executed time slot stamp to synchronize the whole network

### NeuraMatrix Inc. (Received 100 Million investment in A round)

Beijing, China

#### Algorithm Development Intern

Sep 2018 - Jun 2020

- Established a classification algorithm with GAN to increase EEG classification accuracy by 10% by integrating with weak supervised method with Python.
- Designed model VAE for sample enhancement from GAN to decrease noise by 10% and transfer classification capability to different age status by robust classification performance of 85% accuracy.

## PROJECT

### Distribute Network System Development

San Diego, CA

Individual Project, Department of Computer Science and Engineering, UC San Diego

Jan 2022 – Mar 2022

- Constructed 256 servers with GO on Docker on AWS and transmit the data based on TCP/IP protocol to distributed process the data and increase the speed of processing by 10 times.
- Implemented web server based on HTTP protocol and enabled for multiple access at the same time.
- Established fault-tolerance implementation of gRPC-based Dropbox and secure web-based client via TLS

### Parallel Computation Development

San Diego, CA

Individual Project, Department of Computer Science and Engineering, UC San Diego

Jan 2022 – Mar 2022

- Implemented matrix multiplication using cache-sized tiles on a single CPU
- Developed matrix multiplication using parallelism at the instruction level and thread level on GPU
- Constructed Aliev-Panfilov electrocardiac simulation using MPI and up to 480 cores on a supercomputer

### Camping Recommendation Website Development

San Diego, CA

Project Lead, Department of Computer Science and Engineering, UC San Diego

Sep 2021 – Dec 2021

- Developed Camp recommendation website with Node.JS on Heraku platform and constructed functionality for user to login and add/edit/delete ratings and reviews.
- Utilized NoSQL database MongoDB Atlas to store and manage the data of user, camps, reviews and the session.
- Integrated Node with Express based on RESTful and demonstrate the places of camp on map with clustering.