Zanhua Huang

EDUCATION:

- **Northwestern University,** Evanston, IL GPA: 3.97/4.00 2026 expected
  Ph.D. in Computer Science
- **Rice University,** Houston, TX. GPA: 4.00/4.00 Dec 2020
  Master of Computer Science
- **University of Michigan,** Ann Arbor, MI. GPA: 3.81/4.00 May 2019
  Bachelor of Science in Engineering, Computer Science
- **Shanghai Jiao Tong University**, Shanghai, China GPA: 3.50/4.00 Aug 2019
  Bachelor of Science in Engineering, Electronic and Computer Engineering

PROJECTS:

WRF I/O Optimizataions Northwestern University Feb 2022 - present

- Aggregate the write requests from each node and utilize the non-blocking behaviors of PNetCDF to optimize the I/O performance of the Weather Research and Forecasting Model (WRF).

HDF5 Plugin, Log Based VOL Northwestern University Feb 2022 - present

- Implement an HDF5 plugin that is optimized for large amounts of non-contiguous write requests from I/O nodes. Append the data in the order received regardless of its canonical order so that the I/O pattern is always contiguous.

Inexact Bit Quantization For Neural Networks Rice University Mar 2020 - May 2020

- Proposed a novel quantization method to compress pre-trained neural networks. A compression ratio of 3x ~ 9x (no pruning) is achieved, without loss of accuracy.
- We use Tensorflow to calculate the partial derivatives to decide the bit-allocation of each network parameter.

Database System Implementation Rice University Feb 2020 - May 2020

- Built a database system from the ground up using c++. The system includes database management system architecture, query processing and can perform simple optimizations over queries.

Chatbot For Department of Design System Giti Tire/Shanghai Jiao Tong University Aug 2019

- Implemented an nlp-based chat-bot that automatically answers engineers' technical questions based on provided FAQs with an accuracy higher than 98%. The chat-bot uses Client-Server model and runs on Flask + Sqlite3.
- Used agile methodology to ensure the requirements from the company are satisfied.

OS Related Projects University of Michigan Sep 2018

- Built a Linux POSIX multi-threads library that implemented threads and monitors on single-processor systems.
- Built a memory space manager (a kernel pager) that manages the application process's virtual memory address space.
- Implemented a multi-threaded, secure network file server based on hierarchical file systems. Used read-write and hand-over-hand locking mechanism to ensure high accessing concurrency.

RESEARCH:

Reservation Guarantees for Distributed Servers Rice University Jun 2020 - present

- This research is based on *pTrans*. We are trying to find ways to aggregate servers into one or more super nodes so that 1) parallelization among servers can be done 2) and/or to reduce communications between servers.

Cognitive Disorder Prediction Research Assistant University of Florida May 2018 - July 2018

- Increased the accuracy of predicting cognitive disorder from 85% to 86% using SVD/PCA/CUR analysis and SVM.
- Used metabolic data and genetic data to predict human diseases.

TEACHING ASSISTANTSHIP:

***Applied Machine Learning in Python*, at Coursera** University of Michigan May 2018 - May 2019

- Answered students' questions in the course *Applied Machine Learning in Python*. Questions include topics in regressions, kernelized support vector machines, random forests, confusion matrix, data leakage, etc.

SKILLS:

- **Language:** native Chinese, working level of English, conversational Japanese.
- **Computer Language:** Python, C/C++, Java.
- **Computer Coursework**: Operating System, Machine Learning, High Performance Computing, Artificial Intelligence, Database Management and Implementation, Web Development, Game Design.

HONORS:

- Dean's List & University Honors (at the University of Michigan and Shanghai Jiao Tong University).
- James B. Angell Scholar (at the University of Michigan).