

Kaiwen Sun

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Education

University of California, San Diego

M.S. student in Computer Science
GPA: 3.888 / 4.0

Sept. 2015 – Dec. 2016

Nanjing University

B.S. in Computer Science and Technology
Ranking: 1/20 (National Elite Program Class, 20 students selected from 200)
GPA: 88.3%

Sept. 2011 – July 2015

University of Waterloo

Exchange student in Computer Science
Undergraduate Research Assistant
GPA: 3.9 / 4.0

Sept. 2014 – Apr. 2015

Programming Languages & Technical Skills

Expert Languages: Java, C, C++, Python, MATLAB (have C teaching experience)

Programming Tools: Vim, Git, GCC, GDB, Visual Studip, Eclipse, Py2exe, Linux, Windows

Others Skills: Multithreading programming, Network programming, Apache Spark (PySpark), Berkeley Caffe, Verilog, \LaTeX, SSH, NFS, Protégé, Wireshark, Docker, Jupyter, OpenCV(Java), Raspberry Pi

Key Coursework and Projects

Distributed File System

- Use self-implemented general-purpose Java RMI library for remote process communication.
- Java skills include dynamic proxy, reflection, and multithread with read/write lock.

Remote Shell Controller

- An integration of multiprogramming remote terminals like SSH, but has features catering my personal usage.
- Coded in Python. Related Python skills include socket, threading and synchronization, downloading, email, grabbing webpage text, Windows registry, self-updating, cryptography. Can access to computers hidden behind NAT

Virtual Machine Management Cloud (funded by Nanjing Univ. Undergraduate Innovation Program)

- Led a four-member team to design and implement a VM cloud, through which users can create, use, migrate and delete personalized operating system running at distant servers. Coded mainly in C, plus some Python, SQL and JS.

Some Neural Network Projects

- A multi-layer neural network trained by back-propagation, using MATLAB, to learn and test on the MNIST handwritten digit database. (Skills include momentum, weight decay, sigmoid, ReLU, tanh, softmax, validation)
- A convolutional neural network, using Berkeley Caffe (prototxt) and Amazon Web Services, to train and test on the CIFAR-100 Dataset. (Skills include various preprocessing, various optimization gradient methods, fine-tuning, feature visualization)
- A face verification program using DeepID proposed by CUHK scholars. Convolutional network and Siamese network are used.

Some Computer Vision Projects

- A sparse stereo matching program, using corner detection, SSD matching, and Epipolar Geometry.
- An image warping program using homography. Can do projection on any quadrangle in a photo in order to get its front view.
- A program detecting optical flow
- Two human face classifier using eigenfaces and Fisherfaces

Simplified Unix-like Operating System

- Built and coded operating system with I/O, process switching, file system, memory allocation features.

“C-- Compiler”

- Designed and built a compiler with Linux C to check errors and translate simplified C files to MIPS code
- Optimization power of the compiler ranked among top 5% in the class

Program Recognizing Handwritten Chinese Characters

- Designed the recognition algorithm, which was simple but effective. Implemented program with MFC

Boolean SAT Problem Solution Based on DPLL and Probability

- Achieved full marks in this course, due to this fastest solution in my class.

Single Cycle CPU and Multiple Cycle CPU

- Design notes included by lecturer in handouts for future terms. Coded in hardware language Verilog.

Scholarships and Honors

- Won several prizes during undergraduate study, including a 90,000 CNY scholarship.
- Won several honors during undergraduate study, including Outstanding Student of the Jiangsu Province.

Extracurricular Technical Activities

- **Undergraduate Research Assistant (URA)** at University of Waterloo, testing performance of a revised Apache Spark. (Feb. - Apr., 2015)
- **C language class teaching** at Shandong College of Information Technology.
- Built a **VPN server** and provided service to classmates.