Kaiwen Sun

Phone: (858) 336-6271   **GitHub:** https://github.com/kaiwensun
Email: skwkevin836@gmail.com   **Homepage:** http://sites.google.com/site/kwtestkw

Work Experience

Beijing Hengneng Tech. Ltd.   **June.2016 – Sept. 2016**

Software Engineer Intern (The only one software programmer in this start-up)

UAV Camera Head: A program on Raspberry Pi processing images and controlling a Sony camera, a Webcam and servo motors, loaded under a UAV, so that the UAV automatically tracks user-selected objects.

Video Backhaul & Remote Desktop: A remote monitor & control system for multiple users in LAN or WAN.

Skills used: Java, OpenCV, multithreading, Python, Raspberry Pi and some APIs controlling hardware.

Education Experience

University of California, San Diego   **Sept. 2015 – Dec. 2016**

M.S. student in Computer Science

GPA: 3.888 / 4.0

Nanjing University   **Sept. 2011 – July 2015**

B.S. in Computer Science and Technology

Ranking: 1/20 (National Elite Program Class, 20 students selected from 200)

GPA: 88.3%

University of Waterloo   **Sept. 2014 – Apr. 2015**

Exchange student in Computer Science

Undergraduate Research Assistant, testing performance of revised Apache Spark

GPA: 3.9 / 4.0

Programming Languages & Technical Skills

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

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

Others Skills: Multithread programming, Network programming, Apache Spark (PySpark), Berkeley Caffe, Verilog, \LaTex, Py2exe, SSH, NFS, Protégé, Wireshark, Docker, Jupyter, OpenCV(Java), Raspberry Pi, HTML, CSS

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 multithreads synchronized by read/write lock.

Remote Shell Controller

- An integration of multiprogramming remote terminals like SSH, but has features catering my personal usage.
- Client and server's roles are swapped, so that controller can access to computers hidden behind NAT router.

Virtual Machine Management Cloud   (funding from 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 on distant servers. Coded mainly in C.

Some Neural Network Projects

- A multi-layer neural network trained by back-propagation, using MATLAB, to learn and test on the MNIST Dataset.
- A convolutional neural network, using Berkeley Caffe and AWS, to train and test on the CIFAR-100 Dataset.
- 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. Convert any quadrangle in a photo to get its front view.
- A program detecting optical flow
- Two human face classifiers 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 using MFC

Boolean SAT Problem Solution Based on DPLL and Probability

- Achieved full marks in this course, due to this fastest algorithm 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 from UWaterloo.
- Won several honors during undergraduate study, including Outstanding Student of the Jiangsu Province.