Kaiwen Sun

Email: skw_kevin@126.com , skwkevin836@gmail.com
Phone: (858) 336-6271
Homepage: http://sites.google.com/site/kwtestkw/
School: UC San Diego
GitHub: https://github.com/kaiwensun
Major: Computer Science
Objective: Software engineering (backend) and machine learning
Language: English, Chinese Mandarin

Education

University of California, San Diego **Sept. 2015 – Dec. 2016**
M.S. student in Computer Science
GPA: 3.833 / 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
GPA: 3.9 / 4.0

Programming Languages & Technical Skills

Expert: Java, C, C++, Python, MATLAB (**have C teaching experience**)
Others: Multithreading programming, Network programming, Apache Spark (PySpark), Berkeley Caffe, Verilog, \LaTex, Vim, Git, GCC, GDB, Visual Studio, Eclipse, Py2exe, SSH, NFS, Protégé, Wireshark, Docker, Jupyter, Linux, Windows.

Key Coursework and Projects

Remote Shell Controller (developed for my personal use)

- An integration of multiprogramming remote terminals like SSH, but has features catering myself
- 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
- Successfully completed and appraised as “Excellent”
- Coded mainly in C, plus some Python, SQL and JavaScript

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. (Tricks 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. (Tricks include various preprocessing, various optimization gradient methods, fine-tuning, feature visualization)
- Implementing 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.

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- A program detecting optical flow
- Two human face classifier using eigenfaces and Fisherfaces

Simplified Unix-like Operating System (in Operating Systems class)

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

"C-- Compiler" (in Principles and Techniques of Compiler class)

- 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
- Coded in C

Program Recognizing Handwritten Chinese Characters (in Exploration of Problems class)

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

Boolean SAT Problem Solution Based on DPLL and Probability (in Exploration of Problems class)

- It was the fastest solution in my class
- Achieved full marks in this class, due to this creative design based on probability
- Coded in C

Single Cycle CPU and Multiple Cycle CPU (in Computer Organization and System Structure class)

- Design notes included by lecturer in handouts for future terms
- CPUs were designed with Verilog language

Scholarships and Honors

First Class Prize of the Liu Jimin scholarship	(90,000 CNY, Univ. of Waterloo, 2014)
Grand Class Prize of the Elite Program Scholarship	(12,000 CNY, Nanjing Univ., 2013)
First Class Prize of the Elite Program Scholarship	(8,000 CNY, Nanjing Univ., 2012)
Outstanding Bachelor Graduate of Nanjing University	(Nanjing Univ., 2015)
Role Model among Outstanding Students of Nanjing University	(Nanjing Univ., 2014)
Outstanding Student Leader of Nanjing University	(Nanjing Univ., 2014)
Model Student of Jiangsu Province	(Education Dept. of Jiangsu Prov. Government, 2013)
Outstanding Student of Nanjing University	(Nanjing Univ., 2012)
Outstanding Student of the Dept. of Computer Science and Technology	(Dept. of CS, Nanjing Univ., 2011)

Extracurricular Activities

Technical:

- **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.

Non-technical:

- Head of the Science and Technology Department of CS Student Union.
- Establisher of series of Student Forum where students can teach other students about CS.
- Editor of magazines published by Student Union of Dept. of Computer Science and Technology
- Volunteer serving over 50 hours, including taking care of intellectually disabled children, teaching the elderly how to use computers, etc.