# **Kaiwen Sun**

Telephone: (858) 336-6271 School: UC San Diego
Email: skw\_kevin@126.com , skwkevin836@gmail.com

Major: Computer Science
Homepage: http://sites.google.com/site/kwtestkw/

Language: English, Chinese Mandarin

**Objective:** 2016 summer internship / 2017 full time in software development / machine learning

**Education** 

#### University of California, San Diego

Sept. 2015 – Dec. 2016

Sept. 2011 - July 2015

M.S. student in Computer Science

GPA: 3.833 / 4.0

Nanjing University

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:** Berkeley Caffe, Verilog, \LaTex, Vim, Git, GCC, GDB, Visual Studio, Eclipse, Py2exe, SSH, NFS, Protégé, Wireshark, C socket, Python socket, Linux, Windows.

Currently Learning: Apache Spark (PySpark), Jupyter, Docker

## **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)

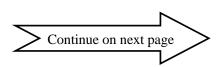
- Led a four-member team to design and implement a VM cloud, through which users can create, use, migrate and delete personalized operating system running at distant servers
  - Successfully completed and appraised as "Excellent"
  - Coded mainly in C, plus some Python, SQL and JavaScript

#### **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.



- 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 Uni	versity (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 an	nd 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.