Shao-Chiang Tsai
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EDUCATION

Washington University in St. Louis May 2017**,** St. Louis, MO
M.S. in Computer Science *GPA: 3.80/4.0*
National Chiao Tung University (NCTU) Sept. 2014, Taiwan
B.S. & M.S. in Computer Science and Engineering

TECHNICAL SKILL

Programming: C/C++, Python, Shell Script, Java, JavaScript, Jquery, PHP, HTML, PostgreSQL, MySQL, MongoDB, NodeJS, AngularJS, Swift
Tools: Git, SVN, GDB, Make, Eclipse, Xcode

WORK EXPERIENCE

Clean Net Corporation St. Louis, MO
Software Engineer June - Present 2017

- Developed a real-time intrusion detection and network security monitoring system based on open source Suricata and Bro
- Design Suricata rules and Bro scripts to detect malware packets and extract files over different internet protocols
- Developed tools in Shell script and Python to assist other team to evaluate system performance
- Integrated the system with our own product 40GbE network security board on super micro server to achieve high speed data processing

National Chiao Tung University (Collaborate with United Microelectronics Corporation) Hsinchu, Taiwan
Research Engineer Sept. - Dec. 2014

- Developed a C++ trace-driven embedded DRAM simulator based on the architecture of two C/C++ open source - DineroIV and DRAMSimII
- Developed a configurable interface for the simulator in order to simulate different product specs provided by UMC
- Proposed Asymmetric Bank Design for embedded DRAM cache which improves energy efficiency by an average of 46.4%

PROJECTS

Smart Home Application
Washington University in St. Louis, Spring 2017

- Developed a real-time IoT service to remotely control appliances and monitor home conditions
- Set up communication among server, client, and IoT devices using Amazon IoT API, AWS Python SDK, and NodeJS SDK
- Developed a real-time displaying and controlling panel website using Node.JS and Socket.IO. on Amazon EC2
- Built Python and Shell script for each IoT devices such as sensors, electronic appliances, and micro server (Raspberry Pi)
- Integrated each IoT devices with wireless mesh network via Shell script to increase scalability and reliability

Technologies used: NodeJS, Socket.io, Amazon IoT, Amazon EC2, Wireless Mesh Network

Space Hero iOS App
Washington University in St. Louis, Spring 2017

- Developed an iOS shooting game app by exploiting SpriteKit framework. Players could control object using iPhone built-in motion/gravity sensors. Players could also share text message and score on Facebook and Twitter

Technologies used: SpriteKit, Facebook API, Twitter API

Wireless Energy Performance Model
Washington University in St. Louis, Spring 2016

- Developed a system to monitor the energy performance for solar decathlon house
- Modified commercial meters to extract recorded data such as power, gas, and water usage via Adafruit_Python library
- Developed application on wireless sensor TelosB in nesC to collect ambient stats and transfer data wirelessly
- Set up micro server (Raspberry Pi) in Java to read data from serial port and visualize the statistic results

Technologies used: TinyOS, nesC, Adafruit_Python library

Student Study Platform
Washington University in St. Louis, Spring 2016

- Built an online study forum on Amazon EC2 and used MongoDB as our database. Evaluate the performance by using benchmark to stress Apache and compare Apache web server on different types of AWS instance

Technologies used: AngularJS, Amazon EC2, MongoDB, Bootstrap

PUBLICATIONS

S.C. Tsai, Y.K. Hao, P. Jendra, and T.F. Chen, "SAMS: A Self Adaptive Mapping Scheme to Assist Page Allocation for DRAM Energy Efficiency," in *International Conference on Circuits, System and Simulation* (*ICCSS*), 2015
http://www.ijeee.net/uploadfile/2016/0831/20160831073527171.pdf