William J. Chen

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EDUCATION

Boston University Boston, MA
Bachelor of Science in Computer Engineering May 2018
Honors: Dean's Scholarship

Boston University Study Abroad Dresden, Germany
Technische Universität Dresden February – July 2016
Language Proficiency: Native in Mandarin Chinese (speaking); proficient in Spanish and German; elementary in French

TECHNICAL SKILLS

Programming Languages: C/C++, Python, Verilog, Unix Shell, LaTeX. **Basic**: C#, Assembly, MATLAB, PHP, SQL
Technologies: Linux Containers (**LXC**), **Docker**, KVM/ESXi, Z File System (**ZFS**), iSCSI**,** Active Directory, DNS, **IPSec** VPNs, AAA (Authentication, Authorization, Accounting) services, Layer 2/3 networks, IPv6 deployment
Hardware: Breadboarding, Soldering, Oscilloscopes, Voltimeters, Computer/embedded systems repairs, FPGA
Operating Systems Experience: Linux (distros: Gentoo, Arch, Debian and its derivatives, CentOS/Fedora, Kali Linux), Mac OS X, Microsoft Windows, pfSense (FreeBSD)

PROJECTS/RESEARCH

Select code available at **github.com/thewilliamchen**

Routing Performance – Configured **single-board computers** (Raspberry Pi, Hardkernel ODROID) running Linux for routing packets to the Internet and through IPSec tunnels at high (240Mbps-1Gbps) speeds. Compiled **kernels** (mainline, OEM) and modules; evaluated performance bottlenecks from softirqs, CPU architecture (ARM big.LITTLE/HMP); tested packet schedulers to reduce bufferbloat.

Elevator FSM – Designed, simulated, and implemented an elevator finite state machine on a Nexys3 Spartan-6 **FPGA** using **Verilog**. The demonstration met and exceeded the requirements for the project due to its responsiveness.

Gutzkowstraße Network – Discovered several loopholes in a Studentenwerk residence hall circumventing a 7-day 21GiB data cap while studying abroad; wrote Python and shell scripts that automated network access, policy routing, and VPN tunneling.

Kinect Four – Created a Connect Four game in C# that could be manipulated with a Natural User Interface using the Kinect v2 sensor for Windows. **Currently recognized for demo** in the Photonics Center.

Elliptic Curve Cryptography – A proof-of-concept implementation of elliptic curve cryptography, built from the ground up without the OpenSSL library in Python. Responsible for frontend development, wrote a GUI using Tkinter.

Baby Incubator Design – Conceptualized, designed, and prototyped a low-cost (~$400) baby incubator intended for use in developing nations as part of a multidisciplinary group of four. Wrote **Arduino** code controlling heating and air circulation elements.

LEADERSHIP

Boston University Boston, MA
College of Engineering 2015-present

Dean's Host – Professionally represent the College of Engineering to prospective students and families. Participated in weekly Open Houses in April 2015 to engage BU acceptees and their parents.

Rocket Propulsion Group (BURPG)

Team Support Technologies – Manage rackmount server and desktop hardware through the **Proxmox** virtualization platform; Deploy **KVM** virtual machines and **LXC** containers that perform simulations for BURPG; Maintain data integrity with offsite backups and RAID over **ZFS**; Provide central file-level storage access with **SMB/CIFS** shares and block-level **iSCSI** targets for bare-metal OS booting.

EXPERIENCE

Saint Anselm College Manchester, NH
HawkNet Summer Consultant June-August 2015
Involved in deployment operations for the college's Computer Replacement Program; created and deployed Microsoft Windows images, and wrote automated installation scripts combined with the Sysprep utility.