Jason Manning

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github.com/manno23

Objective: To continue my career in development and analysis of digital systems by moving to wherever the opportunities present. I wish to work in an environment that allows me to utilize my development experience as well as my passion to work with others, exhibit professionalism, and take on daily challenges.

EMPLOYMENT HISTORY

BIOS Firmware Contractor *Core Control Systems*   *December 2015 - Present*

Created customised boot firmware based on the open source Coreboot project.
Each firmware I customised to the clients needs including such modifications as custom boot animations, disabling harmful CPU features, varying payloads and configurations. I also included hardware modifications to increase security and control of the machines.
Created methods for flashing the ROM chip on a motherboard, using a PIC microcontroller and my interactive python script PyBusPi (available on my Github).

System Administrator *MacBeth Investments*   *August 2015 – October 2016*

General linux administration provisioning thin clients.
Moved system over to BSD firewalls, and gained skills in modern systemd administration techniques. These really helped to automate a lot of the work.
Set up VPNs for remote access.

Embedded Software Engineer Intern *Frigbot*   *May - August 2015*

Designed and Implemented a bootloader solution for use in an M2M embedded micro-controller (16bit PIC device). The bootloader had capabilities to remotely update the main program. Reverse engineered communication protocols of the fridge motor control unit using a logic analyzer and my own oscilloscope.
The bootloader had capabilities to remotely update the main program. Reverse engineered

Purchasing Officer *Hahn Electrical Contracting*   *December 2014 - May 2015*

Designed and Implemented a bootloader solution for use in an M2M embedded
I was responsible for aquirring all tools and materials required for project work. Developed systems and inventories to coordinate available stock with that required.
I also negotiated costs based on expected volumes of stock needed amongst different suppliers.

RELEVANT SKILLS

Embedded   Electronics Design, debugging signals and timings with oscilloscope, C/C++ (gcc, constructing object files with the linker, modifying default stack and heap initialisation, relevant language abilities __attribute__), cooperative multitasking, interrupt handling, minimal Linux builds with busybox and custom kernels, Yocto

Android / Java   OO Patterns, OS knowledge (IPC with Binder interface, services, broadcast listeners, activity lifecycle etc..), building with Ant and Maven, Debugging in Intellij IDE, Test Harnessing

Reverse Engineering   IDA Pro, radare2, x86 asm, pci architecture and initialization, linux and windows OS principles, BIOS, qemu, gdb

Web Design   Python, Django, Javascript, SQL

OS   Windows, Linux, OpenBSD, configuring firewalls (iptables, pf), routing, traffic controls, scripting with bash, package management, secure boot, BIOS design, kernel security (Grsec, apparmor, selinux), systemd administration

OPEN PROJECTS

HydraHead – *Wireless LAN based interactive music system*
  github.com/manno23/HydraHead
  github.com/manno23/Hydra

Cross-platform server (written in multi-threaded python) 'HydraHead' with a GTK frontend. The server responds to and arbitrates events between connected virtual midi ports (which are connected to some music sequencer software) and the attached android clients.
The idea is that the 'Hydra' android application created can be used by multiple people in an audience to interact with a live music performance, with full control given to the music creator in his sequencer software.

EDUCATION

Computer Science   Curtin University *2014*

Electrical Engineering   University of Western Australia *2005 (2 years completed)*

REFERENCES

Darren Dwyer	**Marilyn Green**	**Ling Li**
Managing Director	*Purchasing Manager*	*Associate Professor*
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