FORREST KORAN

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OBJECTIVE

Seeking a full time embedded software/firmware development position

TECHNICAL STRENGTHS

Languages	C, Python, LaTeX, x86 and ARM assembly
Protocols	I2C, I2S, UART, MIPI, DDR4, SPI, eMMC
Tools & Technologies	Git, SVN, GCC, UEFI, Vim
Hardware Platforms	x86, ATMEGA, Arduino, ARM Cortex

PROFESSIONAL EXPERIENCE

Intel Corporation — September 2015 - March 2016
Firmware Engineer, 3D XPoint Controller — *Hillsboro, OR*

- Instrumented firmware to collect performance data that enabled improvements in hardware design
- Improved yield numbers by identifying and fixing bugs in the DDR4 diagnostic code that were causing false positives for part failure
- Tools and Languages: C

Chongqing Medical University — August 2014 - July 2015
Foreign Teacher of English — *Chongqing, China*

- Taught Oral English courses for undergraduates
- Wrote a tool to build a phrasebook of medical terminology by applying an iterative relaxation algorithm to bilingual scientific abstracts, to help researchers in translating their work into English
- Tools and Languages: Python, NLTK

Intel Corporation — January 2011 - May 2014
Firmware Engineer, Mobile Communications Group — *Hillsboro, OR*

- Helped architect Windows/Android dual boot and implemented it in firmware
- Improved BIOS bootup time by a factor of 3x as a result of analyzing the bootup process, identifying and optimizing the critical paths
- Optimized UEFI device drivers for SPI, eMMC
- Implemented UEFI secure variable store
- Shepherded features from pre-silicon emulation to factor reference designs
- Provided test FW for power optimization
- Supported OEM power-ons with Acer and Winstron in Asia
- Configured ACPI tables and GPIO settings to enable Linux kernel drivers and power management
- Tools and Languages: C, x86 Assembly

Intel Corporation — June 2010 - December 2010
Intern, Test Development Engineering — *Hillsboro, OR*

- Wrote a suite of UEFI utilities to test communication with peripheral devices over SPI, I2C, eMMC, and GPIO on an Intel reference platform
- Worked with engineers from Microsoft to ensure the platform performed as expected
- Wrote a framework to support sophisticated executable content during automated functional test
- Improved stability of the multi-threaded control software for Intel's High Density Modular Test suite

· Tools and Languages: C, C++

Garmin AT   January 2009 - June 2009

Intern, Manufacturing Test Engineering   *Salem, OR*

· Worked in the assembly, testing and service plant for Garmin's general aviation subsidiary

· Designed and built an ATMEGA-based embedded controller for a manufacturing test fixture

· Helped build an environmental test chamber and wrote scripts to control RF test equipment including spectrum analyzers, function generators and GPS simulators

· Documented test procedures for ISO-9001 compliance

· Tools and Languages: C, ExpressPCB

EDUCATION

Portland State University   *December 2010*

B.S. in Computer Engineering

Minor in Computer Science

ACADEMIC EXPERIENCE

Capstone Project: Wireless Audio Device

Group project to prototype a wireless audio product for a startup company.

· Tools and Languages: C, EagleCAD, CMSIS, Bluetooth, I2S, ARM Cortex M3

Interactive Robot

Built a robot to approach and react to visitors at a department poster fair

· Tools and Languages: C, VEX, RobotOS, Arduino, GCC-AVR, LTspice, OpenCV

CPU Branch Prediction Tournament

Used the perceptron model described in *Neural Methods for Dynamic Branch Prediction*, Jimenez & Lin 2002 to win a class competition to maximize simulated branch prediction hit rate

· Tools and Languages: VHDL

Instruction level simulator for the PDP-8 minicomputer

Wrote a simulator for the entire PDP-8 instruction set and demonstrated it with a "Hello World" binary

· Tools and Languages: C

Closed loop motor control with a sound card

Built a speed regulator for a brushed DC motor using Fourier analysis of current draw

· Tools and Languages: Python, Linux

Bicycle Speedometer

Built a device to log and display the speed of my bicycle on my daily commute

· Tools and Languages: C, Arduino IDE