JOEL STANLEY

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Experience

- **IBM Ozlabs**—Adelaide, South Australia
  Linux Kernel Programmer: Janurary 2014 - present

    – POWER8 firmware bringup on new platforms
    – Userspace tools supporting Linux on POWER
    – Upstreaming Linux kernel changes in support of support new CPU architecture

- **Minelab Electronics**—Adelaide, South Australia
  Software Design Engineer: 2011 - 2013

    – Worked on embedded ARM platforms for consumer metal detector products.
      Specialised in the following areas
    – Signal processing development
    – Hatachi H8S (16-bit), Altera FPGA, Analog Devices Blackfin, Atmel SAM7 (ARM 7),
      ARM STM32F (Cortex M3)
    – USB device development on Windows, Linux and Android.
    – Linux bringup and boot time optimisation.
    – Linux USB Mass Storage application, including user space code, modification of
      kernel driver, and addition sysfs based event notification
    – ARM STM32F bare metal drivers and application, including USB peripheral driver.
    – Debugging of u-boot, Linux kernel and bare-metal applications using gdb, JTAG.
    – Introduction of Python as a tool for rapid development of testing infrastructure.

- **Multi-processor Systems on Chip Research**—Adelaide, South Australia
  Student Engineer: March - Nov 2010

    – Computer Architecture research focusing on communication and memory subsystems.
    – Developed applications in C and Assembly for a NUMA multi-processor system on
      chip, implemented on a Virtex-6 FPGA.
    – Developed and modified hardware IP using Verilog and VHDL with Xilinx ISE.
    – Produced a demonstration application involving real-time emulation of legacy
      hardware.
    – Received High Distinction and produced work of a publishable standard.

- **Chromium**—Adelaide, South Australia
  Google Summer of Code Participant, Volunteer Software Engineer: March 2009 - Present

    – Implemented features relating to the Linux/GTK version of the web browser.
    – Contributed patches to the WebKit project.
    – Brought up the ARM Linux build on the OMAP3 based BeagleBoard.
    – Assisted in bring-up of 64-bit Linux build.
    – Instrumented power usage of browsers on the ARM Cortex-A8 processor.

- **Australian Semiconductor Design Company**—Adelaide, South Australia
  Software Engineer: Sept 2007 - Feb 2010

  - Worked on embedded systems simulators for cell phones.
  - Prototyped, implemented and maintained continuous integration and build systems.
  - Benchmarking of instruction set simulators.
  - Developed software models of IP blocks using custom simulator backplane in C++.

- **One Laptop Per Child**—Cambridge, MA, USA
  Google Summer of Code Participant, Internship: July - Sept 2007

  - Detailed analysis of laptop power usage.
  - Hardware troubleshooting using C and Forth, and operation of oscilloscopes and logic analysers.
  - Worked with experts in fields of user interface design, security, wireless mesh networking and embedded firmware.

- **MIPS Microprocessor**—Adelaide, South Australia
  Student Engineer: 2007

  - Developed CPU based on MIPS R2000 Instruction Set Architecture in collaboration with team from Harvey Mudd College, CA.
  - Responsible for implementation and layout of cache memory subsystem, using GNU Electric and Xilinx ISE.
  - Involved in verification and simulation using switch level simulation and FPGA implementation. Fabricated by MOSIS.
  - Published award winning paper "A MIPS R2000 Implementation".

Education

- **University of Adelaide**—Adelaide, South Australia
  Bachelor of Electrical and Electronic Engineering (Computer Systems), Honours

  - Achievements:
    * 2010 IET Student Papers Competition: Exploring Multi-Processor System on Chip Architectures, finalist.
    * Participated in the Google Summer of Code, working with Google engineers on Chromium. Granted commit access. (2009).
    * Gained an internship at One Laptop Per Child, a project of the MIT Media Lab (Summer 2007).
    * Published paper "A MIPS R2000 Implementation", special section award at ISSCC, and Student Design competition at DAC.

Skills

- **Systems experience:**

  - Linux 2.6 kernel and systems (userland) programming.
  - OpenFirmware.
  - PowerPC, ARM, PIC and Atmel Microcontrollers, x86.

- **Programming:**

  – Proficient in C, Python, MATLAB, LaTeX, UNIX Shells, Makefiles.
  – Experienced with many version control systems.
  – Familiar with Perl, Java, C++.
  – Have used MSVC and GCC for development, the latter on both big and little endian architectures, as well as 16, 32 and 64-bit systems.

Activities

- **Conference Talks:**

  – *Many-core Programming: A FPGA-based Quad-core Game Boy Emulator* at linux.conf.au, Brisbane, 2011.
  – *Conference talk: "High Altitude Arduino: Project Horus* at linux.conf.au, Brisbane, 2011.
  – *Partnering with Hardware Companies for Open Software* at linux.conf.au, Wellington, 2010.
  – *There's Something on my ARM: Chromium and the Beagleboard* at Open Source Developer Conference, Brisbane, 2009."

References

- **Dr Laurence Stamatescu** *Technology Advancement Group Manager (Adelaide, Australia)*
  Senior researcher and manager at Minelab
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- **Dr Andreas Hansson** *Senior R&D Engineer, ARM (Cambridge, Great Britain)*
  Co-researcher and Advisor for Honours Project at the University of Adelaide
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- **Timothy Ansell** *Software Engineer, Google (Sydney, Australia)*
  Former co-worker at Australian Semiconductor Technology Company
  tansell@google.com - 61 421 968221