NEWELL JENSEN

Experienced software engineer with a strong focus on results that enjoys understanding the underlying logic and mathematics of the algorithms he develops. Glad to articulate his point of view when needed. A collaborative team player, who brings positive energy to any work environment. *Carpe Diem*.

newell.jensen@gmail.com | Vancouver, WA | newell.github.io | github.com/newell

EXPERIENCE

Software and Video Engineer, Author, Typesetter

Gempillar LLC.

May 2020 – Present | Vancouver, WA - Remote

- Founded Gempillar LLC, a mathematics and science communication company.
- Produced high quality typesetting of *Byrne's Euclid* in LaTeX.
- Developed programmatic animations for all of the propositions in the first six books of *Byrne's Euclid* using `Manim`, and contributed to improving `SVG` support through committed code in the Manim Community Edition repository on Github.
- Authoring a complementary mathematics textbook for *Byrne's Euclid*, designed for use by educators and students
- Utilized a range of tools and technologies, including Linux, LaTeX, Github, Python3, Manim Community Edition, and Blender for 3D computer graphics, video editing, and 3D modeling.

Software Engineer

Canonical Ltd.

May 2014 – May 2020 | Vancouver, WA - Remote

- As a Back-end Engineer on globally distributed team for Canonical's Metal As A Service (MaaS) project, contributed to the development of a data center provisioning system, capable of remotely installing Windows, CentOS, ESXi and Ubuntu on real servers to transform data centers into bare metal clouds.
- Demonstrated expertise as a Core Developer, responsible for creating power drivers to communicate and control external hardware architectures for data center provisioning. Developed power drivers for a range of hardware, including but not limited to:
  - AMT
  - America Power Conversion (APC)
  - DLI
  - IBM Hardware Management Console (HMC)
  - IPMI
  - Microsoft OCS
  - Moonshot Hewlett Packard iLO Chassis
  - Redfish API
  - SeaMicro
  - Cisco Unified Computing System (UCS)
  - VMWare
- Collaborated with IBM in Germany to deliver power control for IBM zSystems. Lead project to integrate Intel Rack Scale Design (Intel RSD) hardware into MaaS' umbrella of supported architectures, utilizing the Redfish API power driver. Interacted directly with Intel during product development.
- Utilized a range of tools and technologies, including Linux, Python3, Bash, JavaScript, Django Python web framework, Twisted event-driven networking engine for asynchronous IO, Virtual Machines, Github, Launchpad, Kanban.

Embedded Software Engineer

Digital Dynamics Inc.

Sep 2013 – May 2014 | Scotts Valley, CA

- As an Embedded Software Engineer at DDI, a leading provider of networked I/O control solutions for mission-critical applications, I designed and developed Linux kernel device drivers on embedded system controllers for semiconductor fabrication equipment.
- Spearheaded research on an embedded Linux distribution, utilizing Yocto Project with ARM enabled Xilinx Board support package (BSP) for future EtherCAT products.
- Improved in-house Python scripts used in onsite manufacturing equipment testing, ensuring efficient processes.
- Utilized a range of tools and technologies, including Linux, Python, C, cross compilers, Yocto Project.

Hardware Design Engineer

Cadence Design Systems

Jul 2012 – May 2013 | San Jose, CA

- As a Hardware Design Engineer for Palladium Hardware Emulation Advanced Product Development team at Cadence Design Systems, I was responsible for:
  - Effectively communicating design specifications and performance constraints to I/O card suppliers.
  - Performing signal integrity analysis on I/O card designs utilizing Allegro Sigrity Tool Suite.

Electrical & Embedded Software Engineer

Lam Research formerly Novellus Systems

Aug 2010 – July 2012 | San Jose, CA

- As an Electrical and Embedded Software Engineer at Lam Research, a leading supplier of wafer fabrication equipment and related services to the semiconductor industry, I was responsible for the development and implementation of Linux kernel device drivers on embedded system controllers for semiconductor fabrication equipment. I also served as the lead researcher in migrating QNX controllers to embedded Linux controllers for future EtherCAT products.
  - Developed a C kernel device driver for Linux which used the digital I/O of the RS-232 interface to process data and events from device interrupt requests (IRQ).
  - Contributed to circuit design and board layout for EtherCAT prototypes.
- Utilized a range of tools and technologies, including Linux, Python, C, cross compilers, gEDA schematic capture and PCB layout design software.

Software Engineer

Ventyx

Jun 2007 – Sep 2008 | Sacramento, CA

- As a Software Engineer at Ventyx in a large, a leading software provider of software solutions to global energy, utility, communications, and other asset-intensive businesses, I was a key contributor to the Planning and Risk portfolio. Planning and Risk is a single solution that allows electric utilities, generation companies, retailers, and trading organizations to consistently analyze and review all their existing and potential assets within one tool. Developed new user interfaces (UI) and in-house tools as well as collaborating on the implementation of customer requests.
- Utilized a range of tools and technologies, including Windows, Microsoft .NET, C# and SQL.

Programmer

University of California - Davis

Mar 2006 – Jun 2007 | Davis, CA

- Developed astronomy applications for data gathered from the Texas Echelon Cross Echelle Spectrograph (TEXES). TEXES is designed for high spectral resolution in the mid-infrared (5-25 μm).
- Applications were developed with the Interactive Data Language (IDL) using Linux.

LANGUAGES

English
Spanish

EDUCATION

M.S. in Electrical Engineering

University of Washington

June 2010

B.S. in Applied Mathematics, Minor in Physics

University of California - Davis

June 2007

PUBLICATIONS

Journal Articles

- A. Goforth, H. Hope, C. Condron, *et al.*, "Magnetism and negative magnetoresistance of two magnetically ordering, rare earth-containing zintl phases with a new structure type: $EuGa_2P_2$ ($Pn = P, As$)," *Chemistry and Materials*, vol. 21, pp. 4480–4489, 19 2009.
- J. Rauscher, C. Condron, T. Beault, *et al.*, "Flux growth and structure of two compounds with the $EuIn_2P_2$ structure type, AIn_2P_2 ($A = Ca$ and Sr), and a new structure type, $BaIn_2P_2$," *Acta Crystallographica Section C*, vol. 65, pp. i69–i73, 10 2009.