

Newell S. Jensen
newell.jensen@gmail.com (email)
206.719.1060 (cell)
www.gempillar.com (blog)

Education

M.S. Electrical Engineering (3.7 GPA)
University of Washington, 2010

Specialization in EM and RF circuits with major classes:

- *Transmission Line Theory (multiconductor transmission line theory, signal integrity, power integrity, mixed signal, EMI, etc.)*
- *Antenna Design (wire, aperture, printed antennas, etc.)*
- *EM Theory and Applications (Maxwell's eqns., transmission lines, plane waves, waveguides, networks, etc.)*
- *Principles of Discrete-Time Signal Processing (decimation, interpolation, FIR, DFT, FFT, etc.)*

B.S. Applied Math, Physics Minor (3.4 GPA)
University of California, Davis. 2007

Languages and Dev Tools (yrs)

-- Linux/Unix (6 yrs), Python (6), C/C++ (5), C# (2), .NET (2), SQL (2), MySQL (2), PyGTK (2), Django (2), Verilog (3), Matlab (3), Octave (3), SPICE (2), ... --

Work Experience

8/10-present *Electrical/Software Engineer - Novellus Systems Inc.*

- Product development for next generation semiconductor fabrication equipment. Hardware design with initial board bring up as well as legacy component maintenance, test, and manufacturing. Responsible for electronic schematic design, simulation, electronic component selection, PCB layout, BOM maintenance, FPGA and embedded software programming with ARM uCs. Designs compliant with RoHS, UL, CE, EMI and EMC standards. Hands-on lab experience using oscilloscope, logic analyzer, protocol analyzers, and other standard bench top equipment.

1/09-1/10 *Research Assistant (employee) - University of Washington*
Electrical Engineering Department

- Conducted OFDM underwater acoustic modem research. Hardware platform consisted of an Intel mini-ITX motherboard coupled with Avnet Memec's Spartan-II 200 PCI development kit and P160 Analog Module daughterboard. Coded in Verilog, simulated with Icarus Verilog and GTKWave, and configured the FPGA PCI development board using Xilinx's ISE software. PCI IP core was taken from the open source project OpenCores. Wrote a Linux PCI device driver. Was able to get two nodes talking to each other acoustically via OFDM using GNU Radio software.
- PHY layer RFID research on tag collision resolution. Constructed experimental setup for current and future students. Experimental setup consists of GNU Radio, USRP board, RFID antennas, and RFID tags. Wrote several iterations of Python/C++ signal processing code to analyze interfering Gen 2 RFID tag responses to see if we could extract useful information on number of tags that collided.

5/08-9/08 *Student Developer, Google Inc. - Google Summer of Code Program*

- Worked on the open source gEDA project designing and developing a graphical user interface program deemed the "gEDA Project Manager", which helps integrate all the various EDA tools into one coherent application. 3,000+ lines of Python code (to date) and developed on a Linux platform.

6/07-9/08 *Software Engineer - Ventyx Energy*

- Software engineer in a large, globally distributed team to provide package software solutions for analytics and decision support, energy trading, risk management, power generation optimization and market integration for the energy industry. Worked on 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 graphical user interfaces, tools, algorithms, fixed bugs, and helped with the implementation of customer requests. Majority of development consisted of C# and SQL with .NET and SQL Server.

3/06-6/07 *Programmer* - University of California, Davis
Physics Department

- Programmed applications for data gathered from the Texas Echelon Cross Echelle Spectrograph (TEXES). Code was written in IDL on a Linux platform. TEXES is designed for high spectral resolution in the mid-infrared (5-25 μm).

Research Experience

8/05-3/06 *Undergraduate Researcher* - University of California, Davis
Physics Department

- Conducted synthesis and characterization of novel materials.
- Crystal growth was accomplished utilizing flux methods and solid state synthetic techniques.
- Measurement of magnetic and transport properties of the crystals were performed with a SQUID Magnetometer and Physical Properties Measurement System.

1/03-5/03 *Undergraduate Research Project* - Santa Rosa Junior College
Physics Department

- Designed and built a Tesla Coil from scratch that produces artificial lightning. Tesla Coils are high voltage circuits and this design project was for an undergraduate Physics course.

Presentations

3/06 *Physical Properties of EuIn_2P_2 and EuGa_2P_2* , Meeting of the American Physical Society (APS), Baltimore MD

5/03 *Tesla Coil Presentation*, Day Under the Oaks
Santa Rosa Junior College

Publications

1. Flux Growth and Structure of two Compounds with the EuIn_2P_2 Structure Type, AIn_2P_2 ($\text{A} = \text{Ca}$ and Sr), and a New Structure Type, BaIn_2P_2

Japheth F. Rauscher, Cathie L. Condron, Tanya Beault, Susan M. Kauzlarich, Newell Jensen, Peter Klavins, Samuel MaQuilon, Zachary Fisk and Marilyn M. Olmstead
Acta Crystallographica Section C, 2009, Volume 65, Part 10 i69-i73

2. Magnetism and Negative Magnetoresistance of Two Magnetically Ordering, Rare Earth-Containing Zintl phases with a New Structure Type: EuGa_2Pn_2 ($\text{Pn} = \text{P}, \text{As}$)

Andrea M. Goforth, Håkon Hope, Cathie L. Condron, Susan M. Kauzlarich, Newell Jensen, Peter Klavins, Sam Maquilon and Zachary Fisk
Chemistry and Materials, 2009, 21 (19), pp 4480-4489

Scholarships

Nelson Scholarship, UC Davis, 2006-2007

Frank P. Doyle Scholarship, Santa Rosa Junior College, 2001-2004

Spence Flournoy Memorial Scholarship, Santa Rosa Junior College, 2005

Engineering Transfer Scholarship, Santa Rosa Junior College, 2005