

**Technical Skills**     *Languages:* C++, C#/.NET, Java (JSP, Servlets), JavaScript (jQuery, Angular), HTML, CSS, XSLT, XSD, SQL, Python, MATLAB, Perl, Bash, Haskell

*Libraries and Tools:* Version control (Git, SVN, CVS, Dimensions), Visual Studio, Eclipse, OpenGL, NUnit, Keras, Photoshop, Illustrator, FL Studio, Emacs, L<sup>A</sup>T<sub>E</sub>X

**Education**     **Bachelor of Arts in Computer Science and Mathematics**     2007 – 2011  
Willamette University     Salem, Oregon  
Thesis: Particle Filtering in Nonlinear Non-Gaussian State Estimation  
Honors: R. Samuel Hall Mathematics Scholarship, Pi Mu Epsilon

**Experience**     **Serena Software**     Software Developer  
Hillsboro, OR     May 2015 – November 2017  
– Contributed to Composer, the designer tool for the SBM process management and workflow automation platform.  
– Worked within a large C#/.NET codebase, creating UIs and custom controls built with WinForms and other libraries (DotNetBar, DevExpress), designing XML schemas, transforming hierarchical data into web pages using XSLT, adding new functionality to a REST grid widget, and building web UIs leveraging frameworks including jQuery and Angular.  
– Collaborated with technical support to resolve customer-reported defects.

**National Oceanic and Atmospheric Administration**     Research Intern  
Boulder, CO     May 2010 – September 2013  
Developed a new statistical method for producing probabilistic track position forecasts of tropical cyclones, implemented using MATLAB/Octave.

**Pacific Northwest National Laboratory**     Research Intern  
Richland, WA     June 2012 – September 2012  
Investigated the complexity of bounding the runtime of parallel computations modeled as timed automata. Motivated by applications to the next-gen power grid.

**Oregon State University EECS**     Graduate Teaching Assistant  
Corvallis, OR     Spring 2012  
Graded assignments and occasionally lectured for a Database Management Systems course focusing on the principles of relational database schema design.

**Fun in Motion**     Content Designer  
Austin, TX     July 2009 – April 2010  
Designed levels, edited audio and produced music for the arcade dance game Pump It Up Pro 2.

**Projects**     **Probabilistic Tropical Storm Position Forecasts**     June 2011 – September 2013  
A set of tools written using Octave/MATLAB to generate probability density functions from tropical cyclone ensemble forecasts, and to train the PDFs on historical error statistics. Presented in a talk at the 2012 American Meteorological Society Meeting.

**Nonlinear Non-Gaussian Data Assimilation Methods**     Fall 2010 – Spring 2011  
A comparison of non-linear and non-Gaussian data assimilation techniques (particle filter, EnKF, EnSRF) using the Lorenz-63 and Lorenz-96 models as testbeds. Written in MATLAB.

**Course Work**

Computer Graphics  
Simulation and Modeling  
Theory of Computation  
Differential Equations  
Combinatorics  
Functional Programming

Algorithms  
Databases  
Linear Algebra  
Real Analysis  
Modern Geometry

Data Structures  
Computer Architecture  
Data Assimilation  
Complex Analysis  
General Topology