Thomas Wood

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**Summary**

Senior Data Scientist at a small private laboratory which does research in robotics and artificial intelligence. My work at SynPon has ranged from system identification for humanoid robotic manipulators to signals processing of transcriptome time series data from S. cerevisiae and has even included sentiment analysis and text categorization of posts on StackOverflow.

**Education**

Univ. of Washington

MS Applied Mathematics

Mar 2013 | Seattle, WA

Focus in Scientific Computing, Data Analysis, and Robotics

Lamar Univ.

BS Physics

Dec 2007 | Beaumont, TX

Focus in Longitudinal Optics and Quantum Field Theory

**Links**

GitHub: <https://github.com/odellus>

projects:

<https://github.com/wgapl/mongodb_osm>

<https://github.com/wgapl/parallel_radix_sort>

<https://github.com/synpon/my_atari_ram_policy>

<https://github.com/synpon/prog_nn>

<https://github.com/synpon/min_lstm>

<https://github.com/wgapl/my_bst>

<https://github.com/wgapl/my_brnn>

LinkedIn: <https://www.linkedin.com/in/optimaldynamics>

**Coursework**

Graduate

∙ Scientific Computing

∙ Computational Data Analysis

∙ Neural Control of Motion

∙ Robotic Manipulators

∙ Partial Differential Equations

∙ Nonlinear Dynamics and Chaos

∙ Stochastic Processes

Undergraduate

∙ Quantum Field Theory

∙ Quantum Mechanics

∙ Optics

∙ Solid State Physics

∙ Electrodynamics

∙ Analytical Mechanics

∙ Differential Equations

∙ Linear Algebra I & II

∙ Organic Chemistry I & II

∙ Calculus I-IV

∙Into to Programming

**Skills**

∙ Python – *expert*

∙ Matlab – *expert*

∙ R – *proficient*

∙ C++ – *proficient*

∙ CUDA – *proficient*

*∙* Git – *proficient*

*∙* Spark *– beginner*

*∙* SQL *– beginner*

**Experience**

SynPon

Senior Data Analyst

Jun 2013 – Current | Portland, OR

∙ Extract, Clean, and Transform data from the OpenStreetMap (OSM) project into a consistent format in MongoDB for a Python GIS app that locates the most geographically isolated franchises in Edmonton for those potentially interested in opening another chain retail location.

∙ System identification and state estimation for humanoid robotics with the robotic simulation application MuJoCo

∙ Designed and implemented deep reinforcement learning agents that learn to play Atari games with Tensorflow and SciPy

∙ Rewrote the Fuel data processing pipeline for a natural language understanding systems which was capable of using language syntax to read Wikipedia using recurrent neural networks through the deep learning framework Blocks

∙ Image caption generation using both convolutional and recurrent neural networks via the deep learning library Caffe and the MS COCO dataset

∙ Open source and commercial software development and consulting services

∙ Version control experience through contribution to multiple large projects on GitHub.

Astound

Machine Learning Scientist

Dec 2017 - Mar 2018 | Menlo Park, CA

∙ Development and Implementation of AutoML systems

∙ Applied Natural Language Understanding

Intel

Data Analyst

May 2017 - Aug 2017 | Hillsboro, OR

∙ Creation of automated ETL tools using Pandas and MongoDB

∙ Strategic insight through analysis of time series data

∙ Developed novel web scrapers for data acquisition.

Microsoft

Senior Data Analyst

Jan 2016 - Feb 2016 | Redmond, WA

∙ Text Categorization and Sentiment Analysis of StackOverflow with AzureML, SciKit-Learn, and Theano

∙ ETL with MS SQL Manager.

∙ Data Munging of large text datasets with Python

Sportswear, Inc

Software Engineer

Dec 2014 – May 2015 | Seattle, WA

∙ Image processing software development to display crisp, clear rendered images of virtual shirt designs to potential customers with CUDA and C++

∙ Designed and implemented a new build and test system with Python to replace Visual Studio.

∙ Version control with Mercurial

University of Washington School of Medicine

Research Scientist

May 2013 – Jun 2013 | Seattle, WA

∙ Developed software to repurpose FDA approved compounds through combining atomic level knowledge of compound-protein interactions with compound-disease associations which was able to identify a known use for a compound for over one in four FDA approved drugs which passed an initial screening against the human genome.

University of Washington School of Medicine

Research Fellow

Jun 2011 – Sep 2012 | Seattle, WA

∙ Created method to simulate single nucleotide polymorphisms whose ROC curve was substantially above the identity function through Gaussian anomaly detection to identify mutations which affect gene function.

**Societies**

∙ Optical Society of America

∙ American Nuclear Society

∙ Society for Industrial and Applied Mathematics

∙ Society for Mathematical Biology

∙ Institute for Electrical and Electronics Engineers

**Certifications**

∙ Underactuated Robotics MITx Dec 2015

∙ Initiating and Planning Projects Coursera Jul 2015

∙ Plasma Physics EPFLx Jul 2015

∙ Parallel Programming Udacity Sep 2014

∙ Data Wrangling with MongoDB Udacity Jul 2014

∙ Algorithms Udacity Mar 2014

∙ Machine Learning Coursera Jan 2014