

Curriculum Vitæ

Rory Hartong-Redden

San Francisco, CA
Email: roryhr@gmail.com
Mobile: 925.297.9484
Website: roryhr.github.io
Github: github.com/roryhr

Education

- **University of California, Santa Barbara** Santa Barbara, CA
MS Mechanical Engineering Dec 2014
 - Thesis: *Experimental apparatus for the study of Faraday waves on time-varying domains*
 - **Northwestern University** Evanston, IL
Graduate study: PhD Physics Sept 2010–Mar 2012
 - **University of California, Santa Barbara** Santa Barbara, CA
BS Physics & BS Mechanical Engineering June 2010
 - Thesis: *Experimental and theoretical study of pattern identification in physical systems with circular symmetry*
 - Graduated with honor in both degrees, GPA: 3.7/4.0
 - Dean's List 11/12 quarters
 - Member: Tau Beta Pi engineering honor society
-

Skills

Languages: Python, MATLAB, Ruby, C	Dev Tools: Git, Heroku, PyCharm, AWS, Emacs
Data: SQL, PostgreSQL, HDF5	Machine Learning: Neural Networks, Trees
Beautiful Typesetting: L ^A T _E X	Academic Strengths: Physics, Applied Math
Python Stack: Conda, Keras, matplotlib, NumPy, Pandas, PyTables, scikit-learn, SQLAlchemy	

Work Experience

- **Startup.ML** San Francisco, CA
Machine Learning Fellow Dec 2015–Apr 2016
 - Developed a production FinTech data pipeline for currency trading using industry-standard machine learning methods
 - Investigating how Reinforcement Learning can be leveraged to revolutionize algorithmic trading
- **Harold Washington College** Chicago, IL
Adjunct Faculty Feb 2015–May 2015
 - Gave 2 lectures a week for a descriptive astronomy course
 - Incorporated the latest discoveries in astronomy and the new *Cosmos* into my lessons
- **University of California, Santa Barbara** Santa Barbara, CA
Teaching Assistant Dec 2012–June 2014
 - Introduced machining concepts on the mill and lathe to students in the engineering machine shop
 - Supervised students as they built parts for the class project with zero accidents
- **Northwestern University** Evanston, IL
Teaching Assistant Sept 2010–Mar 2012
 - Prepared quizzes and held office hours to answer questions one-on-one for introductory physics

Projects

- **Kaggle** San Francisco, CA
Home May 2015–Present
 - Coded a deep residual convolution network in Keras/TensorFlow for multi-label classification for the Yelp Kaggle competition [yelp_kaggle repository]
 - Learned object-oriented programming with Ruby and Python
 - Deployed a Twitter clone in Rails on Heroku by following the *Ruby on Rails Tutorial*
 - **Master’s Thesis: Krechetnikov Fluid Physics Lab** Santa Barbara, CA
Research Assistant Dec 2013–Jun 2014
 - Incorporated a recent image processing technique for cheap 3D high speed mm-resolution measurement over a surface area of 225 cm^2 [profilometry repository]
 - **X-Ray Microscopy** Argonne National Lab
Bionanoprobe, Advanced Photon Source, Sector 21 Nov 2011
 - Used the image analysis tools in MATLAB to measure the thermal stability of a new instrument
 - **Arctic Sea Ice Modeling** Northwestern University
Prof. Mary Silber, Dept. of Applied Mathematics Sep 2011–Jan 2012
 - Coded models of arctic sea ice in MATLAB for the study of climate change
 - **Programmable Flow Generator** Goleta, CA
LaunchPoint Technologies Sep 2009–Jun 2010
 - Contributed modeling expertise on team of fellow engineering students working on a fluidic loop
 - **Bachelor’s Thesis: Drop Splash Experiment** Santa Barbara, CA
Krechetnikov Fluid Physics Lab, Dept. of Mechanical Engineering Jul 2009–Oct 2010
 - Investigated the physics of splashes that occur when a liquid droplet impacts a wetted surface
 - Performed stereo triangulation in MATLAB, reduced the 3D data, and searched for patterns using my theory of pattern identification [drop_splash repository]
 - Published a peer-reviewed article³ on the experimental and theoretical advances I developed that may have solved a 100-year puzzle in fluid dynamics
 - **Transient Optical Sky Survey** Santa Barbara, CA
Lubin Lab, Dept. of Physics Sep 2008–Jun 2009
 - Collaborated on the MATLAB/C data pipeline that processed 1GB of images per night
-

Publications

1. R. Hartong-Redden. *Experimental apparatus for the study of Farady waves on time-dependent domains*. Master’s thesis, University of California, Santa Barbara, 2014.
 2. E. Hadjiyska, G. Hughes, P. Lubin, S. Taylor, R. Hartong-Redden, and J. Zierten. *The transient optical sky survey data pipeline*. New Astronomy, 2013.
 3. R. Hartong-Redden and R. Krechetnikov. *Pattern identification in systems with $S(1)$ symmetry*. Physical Review E, 2011.
 4. R. Hartong-Redden and R. Krechetnikov. *Experimental and theoretical study of pattern identification in physical systems on circular domains*. Annual Meeting of the APS Division of Fluid Dynamics, 2010.
 5. R. Hartong-Redden. *Experimental and theoretical study of pattern identification in systems with $O(2)$ symmetry*. Bachelor’s thesis, University of California, Santa Barbara, 2010.
-