

# Dylan Labatt Randle

dylanrandle.github.io

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## EDUCATION

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- **Harvard University, School of Engineering & Applied Sciences** Cambridge, MA  
*Master of Science in Data Science; GPA: 4.0* Sep 2018 – Present
  - **Awards:** IACS Scholarship
- **University of California at Berkeley, College of Engineering** Berkeley, CA  
*Bachelor of Science in Industrial Engineering & Operations Research; GPA: 3.9* Sep 2012 – May 2016
  - **Awards:** High Honors at Graduation, Frank Kraft Award for Freshmen, Dean's List (2012-2016), Phi Beta Kappa

## RELEVANT EXPERIENCE

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- **Harvard University** Cambridge, MA  
*Graduate Researcher* Nov 2018 – Present
  - **GANs for Differential Equations:** Researching methods for training generative adversarial networks (GANs) for solving differential equations in an unsupervised fashion
  - **Neural Networks in Turbulence:** Researched and developed neural network methods for unsupervised learning of solutions to Reynolds-Averaged Navier Stokes (RANS) equations
- **Amazon** Boston, MA  
*Data Science Intern* Jun 2019 - Aug 2019
  - **Data Engineering:** Built automated, scalable data pipeline for big data queries with Spark & Hive on AWS Elastic Map Reduce
  - **Data Science:** Developed tree-based and neural network models for proprietary internal product; incorporated interpretability methods (PDP, ALE, SHAP) and uncertainty quantification
- **Hubdoc** Toronto, Canada  
*Lead Data Scientist* Jan 2017 – Jul 2018
  - **Production Deep Learning:** Developed and deployed production deep learning system using LSTMs & CNNs for entity extraction and text classification of financial documents. Extraction time reduced from 24 hours to 5 seconds; cost savings estimated at \$2MM/year. Tech stack: Python, Keras, Tensorflow-Serving, PostgreSQL, AWS EC2
  - **Data Science:** Conducted business and engineering analyses: e.g. prediction of labor requirements and anomaly detection of web scrapers. Wrote reports and built data visualizations for company intranet in D3.js
  - **Leadership:** Regularly presented results and recommendations to C-suite. Integral in crafting team strategy and roadmap. Involved in fundraising and presentations to investors. Delivered machine learning lecture to 60+ people
- **Taylor Statten Camps** Algonquin Provincial Park, Canada  
*Canoe Trip Guide* Summers 2015, 2016
  - **Canoe Trips:** Led 36- and 50-day canoe trips through remote Canadian wilderness. Responsible for groups of 7 teenage boys. Responsible for planning, safety, and navigation
  - **Camp Maintenance:** Built a new dock; renovated and painted cabins. Leader of roofing crew
- **Bank of Montreal, Capital Markets** Toronto, Canada  
*Financial Products Analyst* Summer 2014
  - **Fixed Income:** Conducted analyses of various debt products (swaps, swaptions, ABS, MBS). Wrote custom C# algorithm to analyze relationship between delta-hedging frequency and returns for Canadian swaptions; found possible trading opportunities
  - **Sales & Trading:** Compiled daily summaries of trading activity. Reviewed and analyzed sales product pitches. Supported both sales and trading with various data analyses

## RELEVANT PROJECTS

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(Titles link to project websites.)

- **Twitter Troll Classification:** Project achieving 96% accuracy classifying Twitter trolls using tweets scraped from accounts indicted for meddling in the 2016 U.S. elections
- **Automatic Differentiation:** Python package implementing automatic differentiation, supporting both forward and reverse modes; stochastic gradient descent and Adam optimizers implemented as example use-case
- **Bayesian GANs:** Paper review, implementation, and demo of Bayesian generative adversarial networks (GANs)
- **Tensorflow on Spark:** Training neural networks on a 1.5 TB dataset with Tensorflow on a Spark/Hadoop cluster with AWS Elastic Map Reduce
- **Microbiome Dynamics:** Modeling Granger causality with causal-LSTM model of high-dimensional experimental microbiome time-series data from mice
- **Safe Autonomous Vehicles:** Critical thinking project demonstrating methods (federated learning, differential privacy, secure multi-party computation) and evaluating policies

## PROGRAMMING SKILLS

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**Languages:** Python (NumPy, Pandas, scikit-learn, PyTorch, Keras, PyMC3, boto3), SQL, C

**Technologies:** AWS (EC2, EMR, S3), Hadoop, Spark, OpenMP, OpenACC, MPI, Git, LaTeX, Markdown