Dylan Labatt Randle

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Education

- **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

- **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 in financial documents. Extraction time reduced from 24 hours to 5 seconds; cost savings estimated at $2MM/year. Tech stack: Python, Keras, Tensorflow-Serving, PostgresSQL, 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; fixed and renovated 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

(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

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