

# DYLAN LABATT RANDLE

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## EDUCATION

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<b>Harvard University, School of Engineering &amp; Applied Sciences</b> <i>M.S. Data Science</i> Applied Computation Scholarship, Special Distinction in Teaching	Cambridge, MA <i>May 2020</i>
<b>University of California at Berkeley, College of Engineering</b> <i>B.S. Industrial Engineering &amp; Operations Research</i> High Honors, Dean's Honors, Phi Beta Kappa, Tau Beta Pi	Berkeley, CA <i>May 2016</i>

## TECHNICAL SKILLS

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<b>Expert</b>	Python (Pytorch, Tensorflow, Scikit-learn, Statsmodels, Pandas, Numpy, Scipy)
<b>Proficient</b>	AWS (EC2, EMR, S3, Athena), Apache Hadoop & Spark, Docker, SQL, Git

## WORK EXPERIENCE

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<b>Amazon Robotics</b> <i>Data Scientist, Intern</i>	North Reading, MA <i>Jun 2019 - Aug 2019</i>
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- Developed machine learning package for proprietary internal project.
- Built automated and scalable data pipeline for big data querying, cleaning, transformation, and loading ( $\sim 1 \times 10^{12}$  rows). Implemented clean, extensible API for feature selection, model training, hyperparameter tuning, and testing. Developed interpretable visualizations (e.g. PDP, SHAP) for model explanations.
- Increased speed and reduced complexity of model development and analysis. Documented and published code to internal repositories.

<b>Hubdoc</b> <i>Data Scientist</i>	Toronto, Canada <i>Jan 2017 - Jul 2018</i>
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- Acquired by Xero for \$70 million USD. First data scientist hired. Hired and led team of two additional data scientists. Presented results and recommendations to leadership. Pitched machine learning products to investors.
- Designed and developed valuable deep learning product for automated data extraction from millions of financial documents. Tested various models (LSTMs, GRUs, bi-LSTMs, CNNs) and problem formulations (word-level, character-level, pre-trained embeddings, positional encodings). Deployed fault-tolerant, asynchronous pipeline serving thousands of predictions per minute with few-second latency, including live monitoring and alerting.
- Product celebrated by customers and praised by leadership for significant value added to sale of the company. Product and team now core to Xero AI products and strategy.

<b>Harvard University</b> <i>Teaching Fellow</i>	Cambridge, MA <i>Nov 2019 - May 2020</i>
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- CS109a: Introduction to Data Science. Prepared lecture materials on boosting, neural networks, gradient descent, backpropagation, and regularization. Explanations and visualizations lauded by students for clarity and simplicity.
- CS205: Computing Foundations for Computational Science. Led hands-on lab sections covering AWS, Docker, OpenACC, OpenMP, MPI, Hadoop, and Spark. Held weekly office hours and graded homework assignments and final projects.

- Awarded Special Distinction in Teaching for exemplary teaching and leadership.

### **Taylor Statten Camps**

*Canoe Trip Guide*

Algonquin Park, Canada

*Summers 2015, 2016*

- Led 36 and 50-day canoe trips through remote Canadian wilderness. Responsible for groups of seven teenage boys. In charge of planning, safety, and navigation.

### **BMO Capital Markets**

*Financial Products Analyst*

Toronto, Canada

*May 2014 - Aug 2014*

- Conducted analyses of interest rate swaps and swaptions. Developed algorithm to model relationship between delta-hedging frequency and expected returns for Canadian swaptions. Discovered potential market opportunities, results praised by traders.

## **RESEARCH & APPLIED PROJECTS**

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### **GANs for Differential Equations**

- Developed novel method for unsupervised training of neural networks to solve differential equations. Leveraged generative adversarial networks (GANs) to learn the loss function. Demonstrated efficacy on a range of problems, increasing accuracy by orders of magnitude over previous methods.

### **Interpretable Reinforcement Learning**

- Researched interpretable machine learning methods and their application to high-stakes reinforcement learning problems. Employed imitation learning to train rules-based models.

### **Neural Architecture Search**

- Harvard Capstone project investigating Differentiable Architecture Search (DARTS) for scientific datasets. Results and blog post (Towards Data Science) viewed thousands of times.

Please see my website for all of my available work: [dylanrandle.github.io](https://dylanrandle.github.io)

## **LEADERSHIP EXPERIENCE**

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### **Harvard Graduate Canadian Club**

*Treasurer*

Cambridge, MA

*Sep 2019 - May 2020*

- Co-organizer of activities aimed at engaging the community of Canadian graduate students.
- Met with leaders of Canadian Embassy to plan future engagements.
- Managed club finances, prepared budgets and fundraising requests.

### **Alpha Pi Mu**

*Vice President*

Berkeley, CA

*Sep 2015 - May 2016*

- Berkeley Industrial Engineering & Operations Research academic honors society.
- Engaged faculty members to participate in program fostering student-faculty interaction and collaboration on research.

## **AWARDS & RECOGNITIONS**

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### **Harvard University**

*School of Engineering & Applied Sciences*

Cambridge, MA

*Aug 2018 - May 2020*

- Applied Computation Scholarship: \$20,000 scholarship for research in data science.
- Special Distinction in Teaching: For exemplary teaching and leadership during Spring semester 2020.

**University of California, Berkeley**  
*College of Engineering*

Berkeley, CA  
*Sep 2012 - May 2016*

- High Honors: Top 10% of class at graduation.
- Phi Beta Kappa: Academic honor society.
- Tau Beta Pi: Engineering honor society.
- Alpha Pi Mu: Industrial engineering honor society.
- Dean's Honors: Top 10% of class in each semester.
- Kraft Award: Perfect GPA (4.0) after freshman year.

## **DELIVERED TALKS**

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**Harvard ComputeFest 2020**  
*Workshop Presenter*

Cambridge, MA  
*Jan 2020*

- Developed and presented “Notebook to Cloud” workshop to ~100 participants for Harvard IACS ComputeFest 2020. Led section on deploying Tensorflow sentiment analysis model with Docker.

**Toronto Machine Learning Summit**  
*Invited Speaker*

Toronto, Canada  
*Nov 2017*

- Presented Hubdoc's deep learning infrastructure to group of ~80 data scientists and engineers. Discussed challenges and best practices for deploying deep learning with Tensorflow-Serving.