Karan Grewal

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Education

University of Toronto *September 2014 – April 2018*
B.Sc., Specialist in **Computer Science**, Major in **Mathematics** *GPA: 3.93 / 4.00*

National University of Singapore *January 2017 – May 2017*
Visiting Student, Coursework in Computer Science, Philosophy & Chinese

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Research Positions

Montréal Institute for Learning Algorithms, Université de Montréal *May 2017 – present*
Research Internship supervised by Yoshua Bengio

Studied the integral role of disperse intermediate representations in Generative Adversarial Nets (GANs) and developed a new training objective using meta-adversarial training. Our method encourages the discriminator to follow a bimodal Gaussian distribution and alleviates vanishing gradients and mode collapse. Currently using conditional normalization to perform zero-shot generalization for image classification and generation.

Dynamic Graphics Project, University of Toronto *September 2016 – present*
Part-time Research supervised by Khai Truong

Applied natural language understanding techniques and textual data analysis to discern rude conversational behaviour in social contexts; identified major problems which make this task difficult. Studied traditional sentiment analysis methods in the context of conversational speech.

Papers

Variance Regularizing Adversarial Learning
Karan Grewal*, R Devon Hjelm*, Yoshua Bengio.
Submitted to ICLR 2018, in ICML workshop on Implicit Generative Models, 2017.

On the Challenges of Detecting Rude Conversational Behaviour
Karan Grewal, Khai N. Truong.
ArXiv pre-print, 2017.

* indicates equal contribution

Industry Experience

Rubikloud Technologies Inc. *May 2016 – September 2016*
Internship with Data Engineering Team

Created an internal pipeline to detect patterns and anomalies in client data. Wrote queries to reverse-engineer unspecified promotions offered by various retailers.

BMO Financial Group *May 2015 – August 2015*

Internship in Technology PMO

Assisted several senior project managers to manage long-term projects to improve internal and client-facing technology platforms.

Talks

1. Université de Montréal, Montréal Institute for Learning Algorithms *September 2017*
   Title: Variance Regularizing Adversarial Learning
2. Canadian Undergraduate Computer Science Conference *June 2017*
   Title: Rudeness Detection in Two-person Conversations

Notable Awards

Samsung Research Scholarship *2017*

Supports Deep Learning research at Montréal Institute for Learning Algorithms.

Dean's List *2015, 2016, 2017*

Honorable mention for students with GPA greater than 3.50.

President's Scholarship *2014*

Awarded to students entering University of Toronto with average greater than 90%.

Teaching

Teaching Assistant

CSC263H1, Data Structures & Analysis, University of Toronto *Winter 2018*
CSC343H1, Introduction to Databases, University of Toronto *Fall 2016*

Computer Skills

Python, Java, C, SQL, Theano, Lasagne.