

AVISHEK (JOEY) BOSE

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EDUCATION

McGill / MILA

PhD Department of Computer Science

September 2018 - Present

*Supervisor: Prof. William Hamilton
and Prof. Jackie Cheung*

University of Toronto

M.aSc Department of Electrical and Computer Engineering

September 2017 - August 2018

Supervisor: Prof. Parham Aarabi

University of Toronto

B.aSc Department of Electrical and Computer Engineering

September 2012 - April 2017

Minor in Mechatronics

Certificate in Engineering Business

EXPERIENCE

FaceShield

Aug 2018 - Present

Founder and CEO

- Founded FaceShield Inc. as a way to bring research done during Master's to the masses. The main mandate of FaceShield is to increase awareness on issues surrounding digital privacy of one's own photos.
- Created a tool that allows anyone to apply a privacy filter to their own photos.

Borealis AI

May 2017 - July 2018

Research Intern

- Published a paper to ACL on Adversarial Contrastive Estimation that effectively improves over Noise Contrastive Estimation approaches by using an Adversarial Adaptive Conditional Negative Sampler to sample harder negatives leading to better and faster convergence.
- Improved the performance of word embedding, knowledge graph embeddings and ordered embeddings on multiple benchmark tasks

University of Toronto

Sept 2017 - Dec 2017

Co-Head TA and Co-Lecturer

- Created and delivered Lectures and Tutorials for a probability course aimed at 3rd/4th year ECE students.
- Responsible for creating and marking of quizzes and assignments

Architech

May 2015 - Aug 2016

Junior Machine Learning Engineer

- Created a novel Eye Gaze Tracking algorithm using input video inputs from webcam's
- Applied Topic Modeling techniques to twitter to discover new emergent sentiments on news stories before they became viral

University of Toronto

May 2014 - Aug 2014

Research Assistant

- Created demos of Veillance Flux and Augmented Reality with the help of Prof. Steve Mann.
- Hardware technologies used include Meta Space Glasses, Microsoft Kinect, and Depth Sense camera's.
- Co-author in a paper published to IEEE GEM 2014 conference

ACADEMIC ACHIEVEMENTS

Young Stars Estes Award

May 2018

- Awarded on a competitive basis to graduate students and post-docs attending the Deep, fast and shallow learning in humans and machines conference in Indiana State University.

Gordon Slemon Design Award

Oct 2017

- The Gordon Slemon Design Award is awarded for excellence in engineering design. It is awarded for the best 4th year design project based as judged by the department based on effective planning, scheduling, reporting, and excellence in design, execution, creativity, etc. The award is in the form of a \$1000 cash prize along with an engraved plaque of all team members.

Centennial Thesis Award

May 2017

- This award is offered to the fourth year student that receives the highest grade in the 4th year Design Project. One award is given for each program: electrical and computer engineering programs. Each award is in the form of a \$500 prize and an accompanying certificate.

Dean's List

April 2015, 2017

- Awarded for academic performance for having an average higher than 80%

Uoft TrackOne Scholarship

April 2012

- Awarded \$2000 based on academic merit

Uoft ECE Presidents Scholarship (declined)

April 2012

- Awarded \$4000 based on academic merit

PUBLICATIONS AND FILED PATENTS

Bose, Avishek Joey, and Parham Aarabi. "Disruption of Face Detection" U.S. Patent No. P7847US00. 13 Sept. 2018.

A. J. Bose, P. Aarabi (2018) "Adversarial Attacks on Face Detectors using Neural Net based Constrained Optimization.", IEEE MMSP, Vancouver, Canada. **ORAL and Best Paper Nominee** [arXiv link](#)

A. J. Bose, Y. Cao, H. Ling (2018) "Adversarial Contrastive Estimation." **ORAL** In Proceedings of ACL 2018, Melbourne, Australia. [arXiv link](#)

R. Janzen, S. N. Yasrebi, **A. J. Bose**, A. Subramanian, S. Mann, "Walking through sight: Seeing the ability to see in a 3-D augmented reality environment", Proc. IEEE GEM, pp. 313-4, 2014. [link](#)

INVITED TALKS AND PANELS

GeekPwn at DefCon: AI/Robotics and Cybersecurity

June 2018

- Talk on Adversarial Attacks against break face detectors to an audience of security experts.

Huawei AI and Security Workshop

June 2018

- Presented Research on Adversarial Attacks against face detectors to Huawei and other expert researchers in the field of adversarial machine learning.

UofT Engineering Science MSF Panel Discussion

April 2018

- Participated as a panelist for 2nd and 3rd year Engineering Science students. Provided advice and direction to students entering machine learning and research in general.