

SICONG (SHELDON) HUANG

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EDUCATION

University of Toronto September 2017 - June 2020

Honours Bachelor of Science

Specialist in Computer Science, Major in Statistics, Minor in Mathematics

Victoria College, Faculty of Arts & Science

Current cGPA: 3.92/4.00

CSAIL and BCS, Massachusetts Institute of Technology June 2019- August 2019

Visiting Student.

Supervisor: Prof. Josh Tenenbaum

University of Toronto, September 2015 - August 2017

Bachelor of Applied Science in **Engineering Science**

Faculty of Applied Science & Engineering

cGPA: 3.90/4.00

(Transferred to the Faculty of Arts & Science after completing Year 1 & 2)

PROFESSIONAL EXPERIENCE

Vector Institute, University of Toronto May 2018 - May 2019

Research Intern (Part time).

Supervisor: Prof. Roger Grosse

Borealis AI (RBC Institute for Research) Jan 2018 - May 2019

Research Intern (Part time).

Manager: Dr. Yanshuai Cao

Vector Institute, University of Toronto September 2017 - April 2018

Student Researcher(Part time).

Supervisor: Prof. Roger Grosse

Department of Computer Science, University of Toronto April 2017 - August 2017

Summer Research Assistant

Supervisor: Prof. Roger Grosse

Ultrafast Photonics Lab, University of Toronto April 2016 - August 2016

Summer Research Assistant

Supervisor: Prof. Li Qian

PUBLICATIONS

1. **Sicong Huang**, Qiyang Li, Cem Anil, Xuchan Bao, Sageev Oore, and Roger B. Grosse. Timbretron: A wavenet(cycleGAN(CQT(audio))) pipeline for musical timbre transfer. In *International Conference on Learning Representations*, 2019

2. Aidan N. Gomez, **Sicong Huang**, Ivan Zhang, Bryan M. Li, Muhammad Osama, and Lukasz Kaiser. Unsupervised cipher cracking using discrete GANs. In *International Conference on Learning Representations*, 2018
3. Y Liu, **Huang, S**, and L Qian. Stable polarization-dependent self pulsing in a brillouin amplified spun fiber. In *Specialty Optical Fibers*, pages SoW1H–6. Optical Society of America, 2016
4. **Huang, Sicong**, Yuancong Xu, Xinghua Yan, Ying Shang, Pengyu Zhu, Wenying Tian, and Wentao Xu. Development and application of a quantitative loop-mediated isothermal amplification method for detecting genetically modified maize mon863. *Journal of the Science of Food and Agriculture*, 95(2):253–259, 2015

GRADUATE-LEVEL COURSES DURING UNDERGRAD

- Machine Learning and Data Mining(CSC411/2515) Winter 2017
 - Statistical Methods for Machine Learning II (STA414/2104) Winter 2019
 - Information Theory (ECE1502) Fall 2019
 - Mathematical Statistics I (STA452/2112) Fall 2019
 - Stochastic Processes (STA447/2006) Winter 2020
- (Note: 2*** means offered as a second year level graduate course.)

TEACHING

Department of Mathematics, University of Toronto

Teaching Assistant, MAT135 (Calculus)

May 2017 - August 2017

Teaching Assistant, MAT223 (Linear Algebra I)

September 2017 - December 2017

Teaching Assistant, MAT224 (Linear Algebra II)

January 2020 - April 2020

LEADERSHIP EXPERIENCE

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Co-Founder and Researcher

June 2017 - Present

- Co-founded an independent, international, distributed for-fun deep learning research group with Aidan Gomez, Ivan Zhang and Byran Li.
- Helped reviewing applications(technical challenge submissions) and interviewing candidates.
- Participated in for-fun research projects, including CipherGAN and computational primitives. Now working on reproducing Exploration Strategies in RL.

UTMIST(University of Toront Machine Intelligence Student Team)

Scientific Advisor

September 2018 - Present

Founder and President

October 2016 - August 2018

- Founded the organization and led a team of 8 executives to organize workshop series; a 10-hour minicourse MIST101; and machine learning industry & academic guest speaker series; for students at U of T.
- Hosted 16 events in the first year.
- Grown to over 700 general members in the second year.

- Currently serving as the Scientific Advisor.
- Practiced event planning; organizational work-flow; dealing with unexpected emergency situation during large scale events; and handling conflicts between executives.

Chestnut Residence Council, University of Toronto
VP Communications

September 2015 - May 2016

COMPETITIONS, SCHOLARSHIPS & AWARDS

- The Dr Lorus J Milne and Dr Margery J Milne Award
University of Toronto May 2019
- Dean's Experience Enhancement Fund
University of Toronto Feb 2019
- Konrad Group Digital Technology Scholarship
University of Toronto & Konrad Group Nov 2018
- The Professor William Kingston and Dr John Kingston Scholarship
University of Toronto Oct 2018
- ICLR Travel Award
International Conference on Learning Representations(ICLR) May 2018 and May 2019
- 1st Place in Microsoft College Code Competition
Microsoft September 2017
- Dean's List
University of Toronto 2015-Present

TECHNICAL SKILLS

Programming	Python, Java, HTML, Matlab, C, Assembly, Verilog, Shell
Machine Learning	Pytorch, Tensorflow
Presentation	L ^A T _E X, PowerPoint
Software Documentation	Markdown, RST, Sphinx
Data Processing & Visualization	Matplotlib, Excel, Origin8, Capstone
Audio Processing	Audacity

INVITED TALKS AND PRESENTATIONS

- **SIAM Talks, MIT**
TimbreTron [Oral] June 2019
- **GANocracy Workshop, MIT**
TimbreTron [Poster] May 2019
- **ICLR2019, New Orleans**
TimbreTron [Poster] May 2019
- **Paper Reading Group, Borealis AI**
Exploration Strategies in RL [Oral] April 2019
- **UTMIST Paper Reading Group, University of Toronto**
Exploration Strategies in RL [Oral] April 2019
- **Victoria College Research Day, University of Toronto**
TimbreTron [Poster] April 2019

- **Vector Research Symposium, University of Toronto** February 2019
TimbreTron [Poster]
- **Roger, Jimmy and David's Groups' Meeting, Vector Institute** January 2019
Tutorial on Exploration in RL (With Danijar Hafner) [Oral]
- **Paper Reading Group, Borealis AI** December 2018
TimbreTron [Oral]
- **NeurIPS2019 ML for Creativity and Design Workshop, Montreal** December 2018
TimbreTron [Oral]
- **Machine Intelligence Conference, MIT** November 2018
TimbreTron [Oral]
- **ICLR2018, Vancouver** May 2018
Unsupervised Cipher Cracking Using Discrete GANs [Poster]
- **UGSRP Talk Series, Dept. of CS, University of Toronto** August 2017
Musical Style Transfer [Oral]
- **UNERD Talk Series, University of Toronto** August 2016
Stable Polarization-Dependent Self Pulsing in a Brillouin Amplified Spun Fiber [Oral]

PRE-COLLEGE RESEARCH EXPERIENCE

Shing-Tung Yau High School Mathematics Award November 2013 - November 2014

Yau Mathematical Sciences Center, Tsinghua University

Studied real analysis and wrote a thesis for the math competition: *Study on the Relative Periodicity and the Long-term Behavior of Hypocycloid and Quasicycloid*. Defended the thesis. The committee includes Shing-Tung Yau and other mathematicians.

Summer Research Student June 2012 - October 2013

Laboratory of Food Safety, China Agricultural University

Self-studied relevant material worked on: *Development and application of a quantitative loopmediated isothermal amplification method for detecting genetically modified maize MON863*