

LYNDON CHAN

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EDUCATION

M.A.Sc., Electrical Engineering

University of Toronto

2017-present (Dec. 2019 completion)

Toronto, Ontario, CANADA

- ADVISORS: Drs. Konstantinos Plataniotis & Parham Aarabi
- THESIS: *Weakly-Supervised Semantic Segmentation in the Multi-Class Setting across Different Image Domains*
- RESEARCH MILESTONES:
 - ICCV 2019 (Mar. 2019): *HistoSegNet: Semantic Segmentation of Histological Tissue Type in Whole Slide Images* (accepted)
 - CVPR 2019 (Nov. 2018): *Atlas of Digital Pathology: A Generalized Hierarchical Histological Tissue Type-Annotated Database for Deep Learning* (paper)
 - IEEE TMI (Nov. 2018): *Focus Quality Assessment of High-Throughput Whole Slide Imaging in Digital Pathology* (paper)
 - 2018 ENGSCI MACHINE INTELLIGENCE BOOTCAMP (Sep. 2018): poster on *Automated Abnormality Detection in Histopathological Images with Deep Learning*

B.A.Sc., Electrical Engineering (GPA 3.64 / 4.0, 17th of 129)

University of Toronto

2012-2017

Toronto, Ontario, CANADA

- FOCUS AREAS: "Control, Communications & Signal Processing", "Analog & Digital Electronics", "Software"
- CAPSTONE PROJECT: *DARI: Depth-variable Augmented Reality Interface*

SKILLS

- **Programming Languages (most to least proficient):** Python (Keras, TensorFlow, Caffe), MATLAB, C/C++, Java, Ruby, R
- **Software:** L^AT_EX, Windows Shell, Wiki Markup, Jupyter Notebook (in progress)
- **Languages:** English (native), Cantonese (fluent), Mandarin (conversational)

INTERESTS

- RESEARCH INTERESTS: Weakly-Supervised Semantic Segmentation (WSSS), Computer-aided Diagnosis (CADx), Computer Vision, Intelligence Amplification (IA), Abnormality Detection
- OTHER INTERESTS: Coding useful tools, Podcasting, Blogging, Teaching, Reading (history, philosophy), Music, Cooking, Translation, Hiking, Running, Swimming

RESEARCH

Master's Student Research Assistant

University of Toronto (Multimedia Lab)

Sep. 2017-present

Toronto, Ontario, CANADA

SUPERVISORS: Drs. Konstantinos Plataniotis & Parham Aarabi

- Developing weakly-supervised semantic segmentation for histological tissue type in digital pathology, with future extensions to abnormality detection, image retrieval, and visual attention aid
- Drafted a study of mathematical derivations of CNN forward and backpropagation
- Performed histological tissue type annotations for digital pathology to build deep learning dataset
- Administered lab research meetings, interviewed prospective summer student researchers, serving as CVPR2020 reviewer

Undergraduate Student Research Assistant

University of Toronto (Multimedia Lab)

May 2017-Aug. 2017

Toronto, Ontario, CANADA

SUPERVISORS: Mahdi S. Hosseini, Dr. Konstantinos Plataniotis

- Devised novel image recognition method using a network of fixed convolutional kernels with maximally-polynomial frequency response

Interim Engineering Intern

Qualcomm Canada

May 2015-Aug. 2016

Markham, Ontario, CANADA

- Software development: built regression test frameworks for optical flow, cadence detection, deinterlacing, image compression
- Other work: performed subjective image quality assessment, administered and operated camera calibration lab & mechanical camera testbed, competed in two internal Qualcomm HackMobile hackathons

Undergraduate Visiting Research Intern

Hong Kong University of Science and Technology (Human Language Technology Centre)

Jun.-Aug. 2014

Clear Water Bay, New Territories, HONG KONG

SUPERVISORS: SU Dan, Dr. Pascale Fung

- (1) Unsupervised clustering of user personalities by nationality from OkCupid
- (2) Song popularity prediction from user mentions on Sina Weibo posts

TEACHING

ECE462: Multimedia Systems (Head Lab TA)

University of Toronto

Jan.-Apr. 2018

Toronto, Ontario, CANADA

INSTRUCTOR: Dr. Dimitrios Hatzinakos

- Responsible for designing and marking eight undergraduate lab assignments and four quizzes on image processing and compression, compiled student material for CEAB review

ECE1512: Digital Image Processing and Applications (Head TA)

University of Toronto

Sep.-Dec. 2019

Toronto, Ontario, CANADA

INSTRUCTOR: Dr. Konstantinos Plataniotis

- Responsible for designing and marking two graduate-level assignments and a final project on XAI and CNN classification