LYNDON CHAN

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Education

M.A.Sc., Electrical Engineering 2017-present (Dec. 2019 completion)
University of Toronto Toronto, Ontario, CANADA

- Advisors: Konstantinos Plataniotis & Parham Aarabi
- Thesis: *Weakly-Supervised Semantic Segmentation in the Multi-Class Setting across Different Image Domains* (defended Oct. 4, 2019)
- 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) 2012-2017
University of Toronto 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:** LaTeX, Windows Shell, Wiki Markup, Jupyter Notebook (in progress)
- **Languages:** English (native), Cantonese (fluent), Mandarin (conversational)

Interests

- Research Interests: Weakly-Supervised Semantic Segmentation (WSSS), Computational Pathology, Computer Vision, Computer-aided Diagnosis (CADx), 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 Sep. 2017-present
University of Toronto (Multimedia Lab) Toronto, Ontario, CANADA
Supervisors: 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 summer student researchers, serving as CVPR2020 reviewer

Undergraduate Student Research Assistant May 2017-Aug. 2017
University of Toronto (Multimedia Lab) Toronto, Ontario, CANADA
Supervisors: Mahdi S. Hosseini, Konstantinos Plataniotis

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

Interim Engineering Intern May 2015-Aug. 2016
Qualcomm Canada 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 Jun.-Aug. 2014
Hong Kong University of Science and Technology (Human Language Technology Centre)
Clear Water Bay, New Territories, HONG KONG
Supervisors: SU Dan, 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) Jan.-Apr. 2018
University of Toronto Toronto, Ontario, CANADA
Instructor: 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) Sep.-Dec. 2019
University of Toronto Toronto, Ontario, CANADA
Instructor: Konstantinos Plataniotis

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