

Lyndon Chan

DATA SCIENTIST · MACHINE LEARNING RESEARCHER

Markham, ON, Canada

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Skills

Expertise	Machine Learning (regression, neural networks, abnormality detection), Computer Vision (classification CNN, detection, segmentation), NLP (search engine, NER), Time-Series Analysis (RNN, forecasting)
Programming	Python, MATLAB, C/C++, Java, R
ML/Data Science	Keras, TensorFlow, PyTorch, NumPy, Scikit-learn, Pandas, Power BI
DevOps	Git, GitHub, SQL, SQL Server, Azure, REST API
Languages	English (native), Cantonese (fluent), Mandarin (proficient)

Education

University of Toronto

Toronto, Ontario, Canada

M.A.Sc. IN ELECTRICAL ENGINEERING

Sep 2017 - Jun 2020

Thesis: *Weakly-Supervised Semantic Segmentation in the Multi-Class Setting across Different Image Domains*, supervised by Konstantinos Plataniotis & Parham Aarabi

Courses: Foundations of Computer Vision (CSC2503H), Random Processes (ECE537H1), Signal Processing (ECE1512H), Convex Optimization (ECE1505H), Object Modelling and Recognition (CSC2523H)

University of Toronto

Toronto, Ontario, Canada

B.A.Sc. IN ELECTRICAL ENGINEERING (WITH HONOURS)

Sep 2012 - Jun 2017

- GPA: 3.64 / 4.0 (17th of 129)
- Areas: "Control, Communications & Signal Processing", "Analog & Digital Electronics", "Software"
- Capstone: "DARI: Depth-variable Augmented Reality Interface" (won Gordon Slemon Design Award)

Publications

Journal Publications

- M. S. Hosseini, **L. Chan**, W. Huang, Y. Wang, D. Hasan, C. Rowsell, K. N. Plataniotis, and S. Damaskinos, "Can Histology Knowledge be Transferred for Histopathology Analysis?," in *Proceedings of the European Conference on Computer Vision (ECCV)*, 2020. (submitted)
- **L. Chan**, M. S. Hosseini, C. Rowsell, K. N. Plataniotis, and S. Damaskinos, "HistoSegNet: Semantic Segmentation of Histological Tissue Type in Whole Slide Images," in *International Conference on Computer Vision (ICCV)*, October 2019, pp. 10662-10671. (paper) (code)
- M. S. Hosseini, **L. Chan**, G. Tse, M. Tang, J. Deng, S. Norouzi, C. Rowsell, K. N. Plataniotis, and S. Damaskinos, "Atlas of Digital Pathology: A Generalized Hierarchical Histological Tissue Type-Annotated Database for Deep Learning," in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2019, pp. 11747-11756. (paper) (website)

Conference Papers

- **L. Chan**, M. S. Hosseini, K. N. Plataniotis, "A Comprehensive Analysis of Weakly-Supervised Semantic Segmentation in Different Image Domains," in *International Journal of Computer Vision (IJCV)*, 2020. (pre-print) (code)
- M. S. Hosseini, Y. Zhang, **L. Chan**, J. A. Brawley-Hayes, and S. Damaskinos, "Focus Quality Assessment of High-Throughput Whole Slide Imaging in Digital Pathology," in *IEEE Transactions on Medical Imaging (TMI)*, 2019. (paper) (code)

Experience

Alphabyte Solutions

DATA SCIENTIST

Vaughan, Ontario, Canada

May 2020 - present

- Implemented an adaptable labour forecasting algorithm using Scikit-learn, Flask, RESTful API, and SQL.

University of Toronto (Multimedia Lab)

GRADUATE RESEARCHER

Toronto, Ontario, Canada

Sep 2017 - May 2020

- Developed novel semantic segmentation algorithm, evaluated state-of-the-art segmentation techniques, compiled image dataset for computational pathology tool with Huron Digital Pathology, and unpublished compiled study of backpropagation in neural networks.
- Advised LG Science Park on development of anomaly detection tool for industrial images.

University of Toronto (Multimedia Lab)

UNDERGRADUATE RESEARCHER

Toronto, Ontario, Canada

May 2017 - Aug 2020

- Designed novel image classification network with fixed maximally-polynomial kernels, and optimized for efficient training on limited pathology images.

Qualcomm Canada

INTERIM ENGINEERING INTERN

Toronto, Ontario, Canada

May 2015 - Aug 2016

- Built unit/functional test frameworks for optical flow, cadence detection, image sharpening, and compression (OpenCV, C/C++).
- Operated image quality assessment and camera calibration lab, and competed in two internal hackathons (Arduino, ROS).

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

UNDERGRADUATE VISITING RESEARCH INTERN

New Territories, Hong Kong

Jun 2014 - Aug 2014

- Implemented web scraping bot (Selenium, Python), unsupervised clustering of user personalities by country from OkCupid (Scikit-learn, PCA).
- Performed social media post scraper from Sina Weibo (Web API, Python), analyzed song popularity.

Teaching

University of Toronto

HEAD TA, ECE1512: DIGITAL IMAGE PROCESSING AND APPLICATIONS

Toronto, Ontario, Canada

Sep 2019 - Dec 2019

- Designed and marked assignments (Turnitin, Canvas) and final project for graduate-level course on CNN classification, XAI.

University of Toronto

HEAD TA, ECE462: MULTIMEDIA SYSTEMS

Toronto, Ontario, Canada

Jan 2018 - Apr 2018

- Designed and marked lab assignments and quizzes (Blackboard) for undergraduate-level course on image processing and compression, was awarded ECE Student Club Teaching Assistant Award.

Community Involvement

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| 2021 | Reviewer , IEEE Winter Conference on Applications of Computer Vision (WACV) | Waikoloa, HI, U.S.A |
| 2020 | Reviewer , Asian Conference on Computer Vision (ACCV) | Kyoto, Japan |
| 2020 | Reviewer , IEEE Conference on Computer Vision and Pattern Recognition (CVPR) | Seattle, WA, U.S.A |