Peter Q. Lee

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https://github.com/PeterQLee

Education

Masters of Applied Science – Systems Design Engineering

University of Waterloo, Waterloo, ON ---------- September 2018 –

- 93 CGPA
- $17 500 NSERC CGSM Alexander Graham Bell Canada Graduate Scholarship
- $50 000 Engineering Excellence Fellowship

Vision and Image Processing Lab - Focus: Remote sensing

- Fully convolutional networks for synthetic aperture radar for sea-ice segmentation
- Beluga whale detection in aerial images.
- Thermal denoising of Sentinel-1 SAR images
- Intramuscular and intermuscular adipose tissue segmentation in water and fat suppressed magnetic resonance images.

Bachelor of Computer Science – with Co-operative Education program, Honours, Minor in Mathematics
First Class Honours and University Medal in Computer Science

Dalhousie University, Halifax, NS ---------- September 2014 – August 2018

- Honours Thesis: "Recurrent Convolutional Networks for Prostate Cancer Segmentation in MRI: DCE time series or Ktrans?"
- 4.24 /4.30 CGPA.
- $16 000 - Dalhousie Entrance Renewable Scholarship.
- $2 500 - The Bruce and Dorothy Rossetti Scholarship Gold Award for a Third Year Student.
- University medal in Computer Science for 2018/2019 (Top graduating CS honours student).

Publications

- **Lee P. Q.,** Xu L., Clausi D. A. "Recalibrating Sentinel-1 Additive Noise-Gain with Linear Programming". IEEE International Geoscience and Remote Sensing Symposium 2020. Submitted January 2020 - **`Abstract`**
- **Lee P. Q.**, Xu L., Clausi D. A. "Sentinel-1 Additive Noise Removal from Cross-Polarization Extra-Wide TOPSAR with Dynamic Least Squares". Remote Sensing of Environment. Submitted October 2019 - **`Paper`**
- Hoar D., **Lee P. Q.**, Guida A., Patterson S., Bowen C. V., Merrimen J., Wang C., Rendon R., Beyea S. D., Clarke S. E. "End-to-end Deep Learning Strategy to Segment Prostate Cancer from Multi-parametric MR Images". Magnetic Resonance in Medicine. Submitted October 2019 - **`Paper`**
- **Lee P. Q.**, Xu L., Clausi D.A. "Methodologies for Sea-ice Segmentation using Fully Convolutional Network". 40th Canadian Symposium on Remote Sensing & Geomatics Atlantic. Fredericton, New Brunswick. June 2019. - **`Oral presentation`**
- Radhakrishnan K., **Lee P. Q.**, Sankar V., Scott K.A., Clausi D.A., Xu L. "Automated Whale Detection from Airborne Optical Imagery along Eastern Canadian Arctic". 40th Canadian Symposium on Remote Sensing & Geomatics Atlantic. Fredericton, New Brunswick. June 2019. - **`Poster presentation`**
    - Won best student poster award
- **Lee P. Q.**, Guida A., Patterson S., Trappenberg T., Bowen C., Beyea S. D., Merrimen J., Wang C., Clarke S. E."Model-free prostate cancer segmentation from dynamic contrast-enhanced MRI with recurrent convolutional networks: A feasibility study". Computerized Medical Imaging and Graphics. Published May 2019. - **`Paper`**
- Guida A., Hoar D., **Lee P. Q.**, Patterson S., Clarke, S., Bowen C. "Systems and Methods for Generating Cancer Predictions Maps from Multiparametric Magnetic Resonance Images using Deep Learning". U.S. Patent Application No. 62/783,734, filed December 21, 2018. Patent Pending. - **`Patent`**
- **Lee P. Q.**, Patterson S., Bowen C. V., Beyea S. D., Rioux J., Merrimen J., Wang C., Clarke S. E. "Identifying Prostate Cancer with MRI and Machine Learning" at Dalhousie Radiology Research Day. Halifax, Nova Scotia. May 2017. - **Oral `Presentation`**

Employment

Teaching Assistant for SYDE 575 (Image processing, Waterloo) --- September 2019 --

- Marking of labs & exams
- Prepared tutorials & supervised labs
    - Communicated concepts and assisted in answering questions from students

Research Assistant at BIOTIC. ---------- January 2017 – August 2018

- Applying machine learning methods with libraries in Python to segment prostate cancer in MR biomedical images.
- Constructing and tuning recurrent and convolutional deep-learning models.

- Manipulating and interpolating biomedical digital images in DICOM and binary formats.
- Experience setting up and conducting hypothesis driven experiments.

Marker for CSCI 2132 (Software development, Dalhousie) ----------January – April 2018

- Marked assignments based on Unix, C programs, and software development practices.
- Coordinated with other TAs to mark assignments, midterms, and exams.
- Handled mark appeals from students.

Learning Center Teaching Assistant ---------- September - December 2016

- Communicated with students to solve issues with computer science related homework and studying.

Research Assistant at Social Navigator Inc.----------May – August 2016

- Recipient of $4 500 NSERC IUSRA grant.
- Used Python and C along with SQL based databases to parse and collect datasets from Twitter.
- Experimented with machine learning techniques, including Neural Networks and Support Vector Machines.

Other

Participated in a number of ACM/ICPC programming team competitions.

- Atlantic Canadian Preliminary Contest: Acadia University, 2015; University of Cape Breton, 2016; University of New Brunswick, 2017 (First place).
- Northeast North America Regional Contest, 2017 (Sixth place).