Golara Javadi

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Highlights of Qualifications

- PhD in Electrical and Computer Engineering at University of British Columbia.
- 4 years of industrial experience in power systems.
- Experienced in managing teams and leading projects.

Technical Skills

Programming	Proficient:	Python, C/C++, Matlab
	Intermediate:	SQL, Linux Shell Script (BASH), LaTeX
	Libraries:	Tensorflow, Pytorch, Theano, Pandas, OpenCV, sci-kit
Software	Technologies:	Version Controlling (git), Anaconda, Docker
	Tools:	PyCharm, Ms. Visual Studio, HeidiSQL, Google Colab
	Platforms:	Linux, Windows

Research Interests

- Generative Models
- Uncertainty estimation
- Interpretability
- Anomaly Detection
- Dynamic Networks
- Signal Processing

Research Experience

Sep. 2018 – Sep. 2022 | **Graduate Research Assistant** at Robotics and Control Laboratory

- Non-stationary time series analysis:
  - Designed a complex neural network to analyze non-stationary time series with an application in guiding systematic prostate biopsy for real time cancer detection.
- Representation learning:
  - Designed a multiple instance learning combined with independent conditional VAE for synthetic data augmentation in a weakly supervised classification of prostate cancer.
  - Developed deep neural maps for unsupervised visualization of high grade cancer in prostate biopsies.
- Uncertainty estimation:
  - Characterized the uncertainty of label noise in systematic ultrasound-guided prostate biopsy.
  - Incorporated model and label uncertainty using MC-drop out and test-time augmentation in cancer detection towards targeted ultrasound-guided prostate biopsy.
- Training with label noise:
  - Established robust training frameworks for classification with noisy labels and label refinement technique.
- Designed a database for management of patients and ultrasound imaging specific data using HeidiSQL.
- Developed a software for data cleaning and pre-processing using mysql and OpenCV.

May 2021 – Sep. 2021 | **Machine Learning Research Intern** at Borealis AI

- Multi-task learning and dynamic networks:
  - Developed a dynamic multi-task learning approach that learns from the training data a hierarchical gating policy consisting of a task-specific policy for coarse layer selection and gating units for individual input instances.

Sep. 2013 – Aug. 2015 | **Graduate Research Assistant** at Multimedia Communications

- Used channel allocation method to transmit JPEG2000 images over cognitive radio networks.
- Developed an algorithm for optimal power allocation in transmission of JPEG2000 image over cognitive radio networks.

Industrial Experience

Mar. 2018 – Sep. 2018 | **Distribution Design Team Lead** at ZE Power Engineering

- Lead engineer for capital and maintenance of projects worth over $\$300,000$ across lower mainland.
- Coordinated with all of the stakeholders in the projects and attend review meetings with clients.
- Mentor, assist, and train more than 15 junior staff in a rapidly growing team.

Jun. 2017 – Mar. 2018 | **Distribution Process Team Lead** at ZE Power Engineering

- Resolved site queries, attended site meeting and performed site inspection prior to and during the construction phase of projects.
- Prepared all the necessary documentation for a project including: budgets, schedules, work plans, technical specifications, tender documents, project calculation, etc..

Sep. 2016 – Jun. 2017 | **Assistant Project Engineer (EIT)** at ZE Power Engineering

- Design and assess power distribution projects: System improvement, System maintenance, Proposed design for non-standard distribution structures.

Sep. 2015 – Sep. 2016 | **Quality Analyst (co-op)** at ZE PowerGroup

- Monitored data flow process accuracy in a timely manner by checking database, processors and their logs and configuration.

Selected Publications

2022 **G. Javadi**, et al., "DynaShare: Task and Instance Conditioned Parameter Sharing for Multi-Task Learning", *Association for the Advancement of Artificial Intelligence, (**AAAI**), 2023, Submitted*

2022 **G. Javadi**, et al., "Training Deep Neural Networks with Noisy Clinical Labels: Towards Accurate Detection of Prostate Cancer in US Data", *International journal of computer assisted radiology and surgery, Springer, 2022*

2021 **G. Javadi**, et al., "Training Deep Networks for Prostate Cancer Diagnosis Using Coarse Histopathological Labels", *International journal of computer assisted radiology and surgery, Springer, 2021*

2021 **G. Javadi**, et al., "Towards Targeted Ultrasound-guided Prostate Biopsy by Incorporating Model and Label Uncertainty in Cancer Detection", *International Conference On Medical Image Computing & Computer Assisted Intervention (**MICCAI**), 2021*

2021 **G. Javadi**, et al., "Characterizing the Uncertainty of Label Noise in Systematic Ultrasound-Guided Prostate Biopsy", *International Symposium on Biomedical Imaging (**ISBI**), 2021*

2020 **G. Javadi**, et al., "Complex Cancer Detector: Complex NeuralNetworks on Non-stationary Time Series forGuiding Systematic Prostate Biopsy", *International Conference On Medical Image Computing & Computer Assisted Intervention (**MICCAI**), 2020*

2020 **G. Javadi**, et al., "Multiple instance learning combined with label invariant synthetic data for guiding systematic prostate biopsy: a feasibility study.", *International journal of computer assisted radiology and surgery, Springer (Volume 15), 2020*

2019 A. Sedghi, M. Pesteie, **G. Javadi**, et al.,"Deep neural maps for unsupervised visualization of high-grade cancer in prostate biopsies", *International journal of computer assisted radiology and surgery, Springer (Volume 14), 2019*

2017 **G. Javadi**, A. Hajshirmohammadi, J. Liang, "Power and sub-channel optimization of JPEG 2000 image transmission over OFDM-based cognitive radio networks", *Signal Processing: Image Communication, Elsevier (Volume 58), 2017*

2015 **G. Javadi**, A. Hajshirmohammadi, J. Liang, "JPEG2000 image transmission over OFDM-based cognitive radio network" *International Conference and Workshop on Computing and Communication (**IEMCON**), IEEE, 2015*

Education

2018 - present — Ph.D. in Electrical and Computer Engineering
University of British Columbia (UBC)
Thesis: "Ultrasound-based Tissue Typing for Prostate Cancer Diagnosis"
Supervisor: Dr. Purang Abolmaesumi

2013 - 2016 — M.Sc. in Engineering Science
Simon Fraser University (SFU)
Thesis: "Transmission of JPEG2000 Images over Cognitive Radio Networks"
Supervisor: Dr. Jie Liang

2008 - 2012 — B.Sc. in Electrical and Computer Engineering
Isfahan University of Technology (IUT)
Project: "Directional Filters and Their Application in Image Processing"
Supervisor: Dr. Saeed Sadri

Honors and Awards

Summer 2021	Machine Learning for CAI Award: (1st place), IPCAI	$1000
Spring/summer 2021	Borealis AI Global Fellowship Award, Borealis AI	$10000
Fall 2020	Faculty of Applied Science Graduate Award, UBC	$8000/year
Summer 2020	President's Academic Excellence Initiative PhD Award, UBC	$2400/program
Fall 2019	Faculty of Applied Science Graduate Award, UBC	$8000/year
Fall 2018	Four Year Fellowship (FYF) for PhD Students, UBC	$26000/year
Fall 2018	International Tuition Award, UBC	$1000/semester
Fall 2015	SFU Dean of Graduate Studies Fellowship, SFU	$6000/year
Spring 2015	SFU Graduate Fellowship, SFU	$6000/year

Selected Volunteer Experience

Dec. 2019 - Present — **Peer Reviewer**,
IEEE Transactions on Medical Imaging (TMI), International Journal of Computer Assisted Radiology and Surgery (IJCARS), Journal of Medical Image Analysis (MedIA), International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)

Dec. 2020 - Apr. 2021 — **Executive Secretary**,
Electrical and Computer Engineering Graduate Student Association (ECEGSA)

Apr. 2018 - Jul. 2020 — **Event Coordinator**,
Women in Engineering and Geoscientists British Columbia

Dec. 2019 — **Volunteer Administrative Assistant**,
Workshop for Women in Machine Learning, NeurIPS, Vancouver, Canada

Dec. 2019 — **Workshop Instructor**,
Deep Learning Workshop, Electrical and Computer Engineering Graduate Student Association (ECEGSA), University of British Columbia, BC, Canada

Hobbies

- ☐ Traveling and camping
- ☐ Water color painting
- ☐ Gardening
- ☐ Hiking
- ☐ Reading