

Data Science Seminar Series

Thursday, January 27th, 3:30-4:30 pm, S375

TITLE

The Promise and Challenges of Machine Learning for Tumor Classification and Prediction in clinical setting

SPEAKER

Dr. Yasin Mamatjan, Engineering Dept, TRU

ABSTRACT

The state-of-the-art genomic profiling identified many clinically and biologically relevant patterns (signatures) that are not resolvable by morphology nor distinguishable under the microscope. With that genomic information and the best treatment targets (biomarkers), doctors can develop an individualized treatment plan for cancer patients and provide precision medicine. The future development of robust tumor classifiers and accurate characterization of brain tumors will be essential for appropriate diagnosis that determines the treatment and management of cancer patients. However, there are challenges of analyzing large genomic data (big data) and reportability crisis due to lack of experienced and well-trained computational personnel, and reliable tools that can be used in clinical settings. Dr. Mamatjan will discuss the utility of machine learning in cancer classification and predictor development in clinical setting.

BIOGRAPHY

Dr. Yasin Mamatjan (Dr. Maimaitijiang) is an Assistant Professor at the Department of Engineering at TRU. Prior to this position, he worked as a senior Scientific Associate at the Princess Margaret Cancer Centre in Toronto, an Assistant Professor at Zirve University, a Marie Curie Research Fellow at Philips Research Laboratory in Germany, a Research Associate/fellow in Biomedical Engineering at Carleton University, and a Software Engineer at the University of Glamorgan in UK. He obtained his PhD degree at the University of Glamorgan, UK and two M.Sc. degrees from Chalmers University of Technology and Jönköping University, Sweden. He is a registered Professional Engineer (P.Eng.) in Ontario, Canada.

As a skilled and experienced expert in Translational Bioinformatics and applied Machine Learning, he has built large scale practical machine learning algorithms to perform pan-cancer classification, identify MGMT methylation status in glioma and predict tumor recurrence in meningiomas using methylation profiling. He is currently expanding on this work by analyzing multi-omics molecular data from tumors of various types to identify novel biologically and clinically relevant tumour subtypes using computational genomics and machine learning approaches. This work may improve our understanding of the biology of these tumors and allow for the prediction of outcome in cancer patients.

<https://scholar.google.ca/citations?user=-8wYvDIAAAAJ&hl=en>

https://www.researchgate.net/profile/Yasin_Mamatjan

<https://ca.linkedin.com/in/yasin-mamatjan-22599364>

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