Jenny Yang

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Education

The University of British Columbia

MSc, Bioinformatics — 2019 – Current
BASc, Engineering Physics — 2014 - 2019

- Graduated with Distinction
- Dean's Honor List
- Chancellor's Scholar Designation

Professional Experience

Canada's Michael Smith Genome Sciences Centre

Master's Research Student — 05/2019 – Current

- Using computer vision to detect, identify, and quantify features in histopathological images across different cancer types
- Implementing and analyzing CNNs for histopathological image classification of genomic features
- Implementing and analyzing a UNet for tumour/non-tumour image segmentation
- Configuring and utilizing Tensorflow and Keras frameworks, and OpenCV library

Bioinformatics Research Student — 05/2017 – 05/2018

- Implemented, optimized, and analyzed an autoencoder model in Python, to determine the most predictive gene clusters in cancer classification, using large-scale transcriptome data
- Configured and utilized Tensorflow framework
- Processed, visualized, and presented data and results
- Presented poster on project, receiving 3rd place at the International Conference of Physics Students (Torino, Italy, August 2017), out of over 200 scientific contributions; award sponsored by Nature Physics

Software Developer Intern — 08/2016 – 09/2016

- Participated in development efforts to establish data sharing infrastructure with the GA4GH database
- Performed development, testing, and configuration in Python, of a GA4GH reference server
- Loaded and validated genomic data within reference server
- Created documentation for new software and procedures

Software Contract Work, Dr. Paul Waraich

Software Developer — 01/2018 – Current

- Developing the software for a "Chatbot" application, which gathers patient information, stores it, and uses it in an effective and safe manner (open source and decreases manual work for doctors using it)
- Creating statistical calculation tools that analyze clinical testing scales

Stanford University, Department of Bioengineering

Computational Biostatistics Research Student — 06/2018 – 08/2018

- Used machine learning models and performed statistical analyses to understand how DNA sequences affect CRISPR/Cas9 technologies
- Implemented and analyzed deep learning models (LASSO, Random Forest, SVM) in R, to predict ricin susceptibility and identify highly active sgRNA sequences for CRISPR activation
- Processed, visualized, and presented data and results

Non-Invasive Neurostimulation Therapies Lab

Work-Learn Student 09/2016 – 05/2017

- Formulated mixed-effects models and wrote methods section for pilot study manuscript
- Managed servers for 5 projects, overseeing data quality, data export, and user rights
- Set-up database and surveys for a new study the lab is conducting on novel treatments for depression
- Maintained and updated lab website

Work-Learn Student 09/2017 – 05/2018

- Implemented variable selection methods and deep learning algorithms in R, to predict biomarkers in depression, using clinical scales
- Processed, visualized, and presented data and results
- Designed and created dynamic and informative lab website in Javascript, HTML, and CSS
- Managed servers for 5 projects, overseeing data quality, data export, and user rights

SMART Technologies

Software Test Developer Intern 01/2016 – 04/2016

- With a team of six interns, created an "Image Search" add-on in Javascript, HTML, and CSS, for the newest release of SMART Technologies' Notebook software (used by millions of teachers worldwide)
- Coded automated software testing methods in Python
- Actively participated in Nerf gun ambushes on other project sub-teams

Presentations

Jenny Yang. Automated Quality Control in Digital Pathology. *Cancer Systems Biology Consortium (CSBC)/Physical Sciences-Oncology Network (PS-ON) Image Analysis Workshop,* Seattle, USA. January 9-10, 2020. [oral]

Jenny Yang, Matthew Hill, Fidel Vila-Rodriguez, Dorian Aur. Improving Clinical Outcomes and Decreasing Unwanted Side-Effects of rTMS Treatment with a Shielding Device. *UBC Department of Psychiatry Research Day*, Vancouver, Canada. June 7, 2018. [poster]

Jenny Yang, Daniel Blumberger, Zafiris J Daskalakis, Colleen Northcott, Joe Tham, Raymond Lam, Jonathan Downar, Fidel Vila-Rodriguez. Machine Learning Predicts Response to rTMS in Depression. *UBC Undergraduate Neuroscience Conference*, Vancouver, Canada. January 25, 2018. [poster]

Jenny Yang, Jasleen Grewal, Steven Jones. Identifying Functional Clusters of Genes for Personalized Therapy in Medicine. *The International Conference of Physics Students*, Turin, Italy. August 7-14, 2017. [oral] [poster]

Jenny Yang, Daniel Blumberger, Zafiris J Daskalakis, Colleen Northcott, Joe Tham, Raymond Lam, Jonathan Downar, Fidel Vila-Rodriguez. Machine Learning Predicts Response to rTMS in Depression. *UBC Department of Psychiatry Research Day*, Vancouver, Canada. May 25, 2017. [poster]

Afifa Humaira, **Jenny Yang**, Katie Green, Nick Ainsworth, Marlon Danilewitz, Colleen Northcott, Daniel Blumberger, Jonathan Downar, Zafiris Daskalakis, Joe Tham, Raymond Lam, Fidel Vila-Rodriguez. Side Effects of rTMS in HFL vs. TBS Study for Major Depressive Disorder Treatment. *UBC Undergraduate Neuroscience Conference*, Vancouver, Canada. September 9, 2016. [poster]