Kristy Mualim

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Education

- **McGill University** — Montreal, QC
  Bachelor of Science in Biochemistry, C.S — *Sept. 2015 – Dec. 2018*
  - **BL21 Research Scholar**: Top 20 Independent Research Scholarship for Most Innovative Research Ideas
  - **Yale hackathon sponsor award**: Highest social good impact & most scalable use of Machine Learning
  - **T.E.A.M Scholar**: 10 selected as teaching assistants
  - **Executive Roles in student groups**: Managed HANY[1], Branch-Out Mentorship[2], Roots[3]
- **International Culinary Centre** — New York, NY
  Professional Diploma for the Culinary Arts in French Cuisine — *Jan. 2015 – July. 2015*
  - **Maintained Perfect Attendance and Service Awards**:

Research Experience

- **Undergraduate Research Assistant** — McGill University, Montreal, QC
  Principle Investigator: Dr. Jerome Waldispuhl, Department of Computer Science — *May. 2018 - Jan. 2019*
  - **Structural Biochemistry and Bio-informatics Research**: Implemented CNNs to solve multiple sequence alignment problem via utilizing human-computing crowd sourcing platform - Phylo[4], Implemented machine learning algorithms for puzzle feature extraction
- *Principle Investigator: Dr. Kalle Gehring, Department of Biochemistry* — *Sept. 2016 – June. 2018*
  - **DENND3 linker protein:**: Discovered unexpected secondary structure within linker domain of mitochondrial protein involved in autophagy. Obtained detailed N15-labelled NMR spectrum of structure
  - **CNNM Transmembrane protein:**: Crystallized full length CNNM Transmembrane protein, supervised an undergraduate

Projects

- **Deep learning in gene expression inference**: Utilized deep learning to predict gene expression of target genes via landmark genes in the LINCS Consortium, Introduced & improved baseline algorithms, Analyzed and preprocessed RNA-seq, GTE and GEO expression data
- **Addressing building accessibility**: Utilized machine learning on accelerometer data to measure building accessibility [5]
- **Computer visualization & classification task**: Utilized CNNs and deep learning to predict hand-drawn images from GoogleDraw Competition, improved prediction accuracy by 11%.
- **PyTorch Open-source Implementation:**: Contributed cGAN implementation

Relevant Courses

Core Courses	**Other Courses**
Applied Machine Learning	Probability
Software Systems	Calculus & Linear Algebra
Computational Biology Research & applications	Statistics
Algorithms & Data Structures	Fundamentals of Computing

Programming Skills

- **Languages**: Python, Java, C, Linux BASH Scripting, working knowledge of R

[1] a non-profit student run organization that offers French & English tutoring to refugees.
[2] An initiative to provide after-school creative programs for students in community high schools
[3] An initiative to de-stigmatize issues on mental health. *open-mic events to be featured in Green lion films documentary*
[4] https://phylo.cs.mcgill.ca/; a crowd-computing platform for multiple sequence alignment.
[5] https://mcchillteam.wixsite.com/maxcessibility/home-1;