

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 HANY¹, Branch-Out Mentorship², Roots³
- **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 - Phylo⁴, Implemented machine learning algorithms for puzzle feature extraction
- *Principle Investigator: Dr. Kalle Gehring, Department of Biochemistry* *Sept. 2016 – June. 2018*
 - **DENND3 linker project:** Discovered unexpected secondary structure within linker domain of mitochondrial protein involved in autophagy. Obtained detailed N15-labelled NMR spectrum of structure
 - **CNNM Transmembrane project:** 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 accessibility⁵
- **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

Applied Machine Learning
Software Systems
Computational Biology Research & applications
Algorithms & Data Structures

Other Courses

Probability
Calculus & Linear Algebra
Statistics
Fundamentals of Computing

PROGRAMMING SKILLS

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

¹a non-profit student run organization that offers French & English tutoring to refugees.

²An initiative to provide after-school creative programs for students in community high schools

³An 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>;