Kristy Mualim

http://www.kmualim.github.io

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Education

- **McGill University** — Montreal, QC
  Bachelor of Science in Biochemistry, C.S — *Sept. 2015 – April. 2019*
  - **BL21 Research Scholar**: Top 20 Independent Research Scholarship for Most Innovative Research Ideas
  - **Yale Hackathon 2018 Sponsor Award**: Most Social Impact & High Scalability Use of Machine Learning
  - **T.E.A.M Scholar**: 10 selected as teaching assistants
- **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**:
- **Serangoon Junior College** — Singapore, Singapore
  GCSE A'Level Certification — *Jan. 2013 – Dec. 2014*

Research Experience

- **Undergraduate Research Assistant** — McGill University, Montreal, QC
  Principle Investigator: Dr. Jerome Waldispuhl, Department of C.S — *May 2018 - Present*
  - **Structural Biochemistry and Bio-informatics Research**: Implemented CNNs to solve multiple sequence alignment problem via utilizing human-computing crowd sourcing games - Phylo[1]
- *Principle Investigator: Dr. Kalle Gehring, Department of Biochemistry* — *Sept. 2016 – June. 2018*
  - **Protein and nucleic acid structure analysis**: Conducted in-depth research, compile data and prepare papers for presentation to supervisors. Spearheaded teambuilding efforts such as retreats. Supervised an undergraduate.
  - **DENND3 linker project**: Initiated novel project and discovered secondary structure within linker domain of mitochondrial protein involved in autophagy. Obtained and crystallized detailed N15-labelled NMR spectrum of structure
  - **CNNM Transmembrane project**: Resolved full crystal structure of CNNM Transmembrane protein

Projects

- **Predicting gene expression**: Utilized deep learning framework to predict gene expression of target genes via landmark genes in the L1000 Consortium, Introduced and improved baseline algorithms
- **Building accessibility App**: Utilized deep learning framework on accelerometer data to measure building accessibility
- **Computer visualization & prediction of hand-drawn images**: Utilized CNNs and deep learning to predict hand-drawn images from GoogleDraw Competition
- **Predicting Secondary Protein Structure**: Utilized Cryo-EM data to predict secondary protein structures

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, BASH Scripting Mathematica

Technologies: GoogleCloud Computing, Wolfram

[1] https://phylo.cs.mcgill.ca/; a crowd-computing platform for multiple sequence alignment.