

Timothy Liao

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SKILLS

Bioinformatics: Biopython, Pymol, NCBI BLAST, Galaxy

Languages: Python, SQL, R

Developer Tools: Git, VS Code, Visual Studio, PyCharm, Jupyter Notebooks, Google Colab

Cloud Technologies and Data Processing: Google Cloud Platform (GCP), Google BigQuery, Apache Beam

Data Science Libraries: pandas, NumPy, Matplotlib, scikit-learn, Plotly

Molecular Biology: CRISPR/Cas9 gene editing, recombinant DNA cloning, site-saturation mutagenesis, DNA sequencing analysis, high-throughput library construction, assay development, ELISA

EXPERIENCE

Data Engineer – Bioinformatics

July 2022 - January 2024

BenchSci (Scinapsis Analytics Inc.)

Toronto, ON (remote)

- Developed and maintained ETL/ELT data processing for ingestion and normalization of various diverse external databases
- Evaluated external third party data sources in support of company objectives and assessed quality of data by employing data exploration and visualization tools
- Implemented robust data quality checks within ETL/ELT workflows to ensure accuracy, consistency, and completeness of processed data
- Engineered effective data models and schemas to support data integrity and facilitate seamless integration with downstream applications

Associate Scientist II *formerly Associate Scientist I*

Nov 2020 - July 2022

Hyasynth Biologicals Inc.

Montréal, QC

- *Formerly Associate Scientist I, Research Associate II, Research Associate I*
- Engineered several key enzymes for improved functions using high-throughput workflows culminating in 2 patent applications
- Developed computational methods for high-volume protein engineering assay data analysis
- Established bioinformatic methods for analysis of next-generation sequencing data
- Strengthened company's IP portfolio by preparation of patent applications
- Led protein engineering initiatives requiring coordination across several junior researchers and weekly communications with stakeholders

Research Associate II *formerly Research Associate I*

May 2018 - Nov 2020

Hyasynth Biologicals Inc.

Montréal, QC

- Demonstrated cannabinoid drug production in a heterologous expression system
- Optimized protocols for high-throughput construction of mutant libraries
- Developed high-throughput enzyme assays that were used for protein engineering studies

Graduate Student Researcher

Jan 2014 - May 2016

Molecular Genetics, University of Toronto

Toronto, ON

- Produced photoreceptors and RPE cells from mammalian retinal stem cells using molecular signalling to direct differentiation in mammalian cell culture

Undergraduate Student Researcher

May 2011 - Aug 2013

Biological Sciences, Genetics, University of Manitoba

Winnipeg, MB

- Completed Honours thesis characterizing UV-damaged DNA repair in *Arabidopsis thaliana* by analyzing protein interactions using various molecular biology techniques

EDUCATION

McGill University

Master of Science (Applied), Biotechnology

Montreal, QC

2017 – 2019

University of Manitoba

Bachelor of Science (Honours), Genetics

Winnipeg, MB

2009 – 2013

PATENTS

A. G. Bell. Improvement in telegraphy, March 1876.

PUBLICATIONS

HONOURS AND AWARDS

- CIHR Frederick Banting and Charles Best 2015-2016
Canada Graduate Scholarship – Master’s level
- The Stella Zegas-Dunn Graduate Fellowship in Vision Science 2014–2015, 2015 - 2016
Vision Science Research Program
- NSERC CREATE in M3 Scholarship 2014 - 2015
- Faculty of Science Undergraduate Research Award Summer 2011, 2012, 2013
- University of Manitoba Merit Award 2012 - 2013
- University of Manitoba Student Union Scholarship 2012 - 2013
- First Class Dean’s Honour List 2009 - 2013