Timothy Liao

(438) 979 - 2698 | tmliao2@gmail.com | LinkedIn | GitHub

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

Work 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 May 2018 - July 2022
Hyasynth Biologicals Inc. *Montréal, QC*

- *Formerly Associate Scientist I, Research Associate II, Reasearch 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

Associate 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

Education

McGill University Montreal, QC
Master of Science (Applied), Biotechnology *2017 – 2019*
University of Manitoba Winnipeg, MB
Bachelor of Science (Honours), Genetics *2009 – 2013*

Patents and Publications

Liao T. S., Song L., Hom L., Walton C., Furlong D., Melgar M., Bhargava D., inventors; Hyasynth Biologicals Inc., assignee. Olivetolic acid cyclase variants with improved activity for use in production of phytocannabinoids. World patent WO 2022104460A1 Accessed: Jan. 17, 2024. [Online]. Available: https://patents.google.com/patent/WO2022104460A1/en?assignee=Hyasynth&oq=Hyasynth

Song L., Liao T. S., Walton C., Hom L., Melgar M., Furlong D., Bhargava, D., Palys S., Bourgeois L., inventors; Hyasynth Biologicals Inc., assignee. Cannabidiolic acid synthase variants with improved activity for use in production of phytocannabinoids. World patent WO 2022104468A1 Accessed: Jan. 17, 2024. [Online]. Available: https://patents.google.com/patent/WO2022104468A1/en?assignee=Hyasynth&oq=Hyasynth.

Ly V, Collister DT, Fonseca E, Liao TS, Schroeder DF. (2014). Light and COP1 regulate level of overexpressed DET1 protein. Plant Science. 2015;231:114–23. doi:10.1016/j.plantsci.