Michael Son

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A biotech professional with an MSc. degree in Chemical and Bioengineering and 2 years of industry experience, and a certified data scientist trained in cleaning, feature engineering, and analyzing data for use by technical and non-technical personnel. Expertise in molecular biology techniques, NGS technologies, and data analysis, and proficiency in designing and conducting rigorous experimental research utilizing state-of-the-art equipment.

SKILLS

- **Programming Languages:** Python | SQL
- **Data Science:** Data Cleaning | Data Analysis | Data Visualization | Feature Engineering | Machine Learning
- **Experimental Techniques:** Cell Culture | Western Blot | Immunocytochemistry | DNA/RNA Isolation | Molecular Cloning | PCR | DNA/RNA-Seq | In Vitro Transcription | Protein Dialysis | Gel Electrophoresis | SDS-PAGE
- **Analytical Techniques:** UV-VIS Spectroscopy | Dynamic Light Scattering | Zeta Potential | Analytical Ultracentrifugation | Oligonucleotide Quantification | Capillary Electrophoresis | qPCR/RT-PCR | Fragment Analysis | Fluorometric Analysis (DNA/RNA) | Enzyme Kinetic Assay | Gel Image Analysis
- **R&D:** Analytical Assay Development | Proof of Concept Development | Instrument Scripting

WORK EXPERIENCE

Associate Scientist III – R&D 09/2022 – Present
Tecan Genomics, Inc. | *Redwood City, CA*

- Develop a proof of concept to incorporate NGS library prep workflows into an automated system (MagicPrep) as part of B2B projects.
- Test the proof of concept on the MagicPrep instrument.
- Devise and conduct experiments to enhance the internal QC of Sensiscript reverse transcriptase.

Associate Scientist II – R&D 01/2022 – 09/2022
Tecan Genomics, Inc. | *Redwood City, CA*

- Designed and conducted experimental studies to develop a reverse transcriptase used in NGS library prep.
- Developed and performed various gel-based nuclease assays and a highly sensitive and robust enzyme kinetic assay to generate specifications for the in-house reverse transcriptase.
- Devised and executed the stability/shelf-life study of the reverse transcriptase.
- Authored relevant SOPs for the development work.

System Verification & Validation Engineer, Scientist 08/2021 – 01/2022
Thermo Fisher Scientific | *South San Francisco, CA*

- Conducted verification/validation tests on the Applied Biosystems SeqStudio Flex Series Genetic Analyzer.
- Documented the results and revised the SOPs, contributing to quality assurance.

Engineering Intern 05/2017 – 08/2017

IMS & Nano Tech Co., Ltd. | *Seoul, South Korea*

- Evaluated potential algorithms for the signal processing of 3D imaging sensors based on white light scanning interferometry (WSI).
- Proposed and implemented an alternative SEST algorithm in the imaging sensor in development, witnessed significant improvement in the scanning speed while retaining the accuracy.
- Inspected and revised technical translation of imaging device configuration and notification settings for quality assurance.

Student Research Assistant 05/2013 – 08/2013

Korea Institute of Science and Technology | *Seoul, South Korea*

- Performed cell culture, western blot, immunocytochemistry, DNA/RNA isolation, PCR, and molecular cloning for the in vitro loss-of-function studies on PAR 3/6 proteins.
- Verified the extent of PAR 3/6 proteins' influence on axon regeneration of adult mice dorsal root ganglion.
- Planned and conducted a chronic stress model study investigating axon regeneration in adult mice neurons.

E D U C A T I O N

Data Science Career Track 05/2021

Springboard | *San Francisco, CA, US*

- Hands-on curriculum with 1:1 industry expert mentor oversight, and completion of 2 in-depth capstone projects.
- Mastered skills in Python, SQL, data analysis, data visualization, hypothesis testing, and machine learning.

Master of Science | Chemical and Bioengineering 09/2019

Friedrich-Alexander-Universität Erlangen-Nürnberg | *Erlangen, Bavaria, Germany*

Master's Thesis: Protein Aggregation Studies of the Model System Beta-Lactoglobulin via Multiwavelength Analytical Ultracentrifugation

- Conducted a comprehensive investigation into protein aggregation utilizing multiple analytical techniques including dynamic light scattering (DLS) and analytical ultracentrifugation (AUC).
- Analyzed the concentration and pH-dependence of protein-protein interaction (PPI) via SEDFIT and SEDANAL.
- Successfully quantified the monomer-dimer self-association kinetics of PPI using equilibrium coefficient and solution non-ideality parameters (Gralen coefficient, diffusion interaction parameter, osmotic second virial coefficient).
- Endorsed AUC as a profound quantitative method for analyzing protein solution behavior.

Honours Bachelor of Science | Neuroscience/Cell Molecular Biology Double Major 06/2014

University of Toronto – St. George | *Toronto, ON, Canada*

- HBSc. in Neuroscience and Cell Molecular Biology with an emphasis on neurobiology, cell biology, and associated pathologies.