Michael Son

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Meticulous and analytical researcher with expertise in molecular biology techniques and data analysis. Detail-oriented and methodical professional proficient in conducting rigorous experimental research utilizing state-of-the-art equipment. Familiar with gathering, cleaning, and organizing data for use by technical and non-technical personnel. Advanced understanding of statistical, algebraic, and other analytical techniques.

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 MagicPrep NGS system.
  - Perform benchtop NGS library prep.
  - Develop and optimize automated NGS library prep workflows.
  - Write instrument scripts for the automated NGS library prep workflows.
  - Test the automated NGS library prep workflow on the 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 an enzyme used in NGS library prep.
- Developed and performed qualitative/quantitative gel-based nuclease assays for QA/QC of the enzyme.
- Developed a highly sensitive and robust enzyme kinetic assay.
  - Can discern a 5% difference in the molar concentration of enzyme.
  - Continuously achieved %CV of 5% or less.
- Generated quality specifications for enzymes.
- Planned and executed the stability/shelf-life study of the enzyme.
- Experimental data analysis and SOP development.

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 verification/validation test results.
- Revised the test protocols and associated documents, 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.

EDUCATION

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.