# Michael Son

Santa Clara, CA 95050 | (669) 216-7817 | michaelj.son@icloud.com
linkedin.com/in/michael-json/ | michael-json.netlify.app/

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 an automated system (MagicPrep) as part of B2B projects.
    - 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.
    - Succeeded in generating DNA libraries from the automated NGS library prep workflow.
- 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 gel-based nuclease assays for QA/QC of the reverse transcriptase.
- Developed a highly sensitive and robust enzyme kinetic assay for reverse transcriptase.
    - Discerns difference in molar concentrations of reverse transcriptase as low as 5%.
    - Continuously achieved %CV of 5% or less.
- Generated quality specifications for the reverse transcriptase.

- Planned and executed the stability/shelf-life study of the reverse transcriptase.
- 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.