Sindhura Thirumal | sindhura.thirumal@gmail.com | 416-898-2304 | sindhurathiru.github.io

Summary

Accomplished data scientist and software developer with extensive experience in machine learning and full-stack development. Proficient in designing and implementing predictive models, developing data analysis pipelines, and building software solutions using Python. Strong background in biology and computer science, with published work in IEEE and Cytometry Part A. Demonstrates strong communication, collaboration, and problem-solving skills, with a passion for leveraging data-driven insights to drive meaningful impact.

Experience

DATA SCIENTIST | HEALTH CANADA **|** MAY 2023 – PRESENT

- Built scalable reporting automation pipelines using SQL, Python, & VBA for data retrieval, transformation, and programmatic generation and distribution of externally distributed reports
- Improved internal stakeholder efficiency by over 98% and won an *Excellence in Client Service* award for exceptional cross-functional collaboration
- Developed a custom SQLite database to organize and manage unstructured data, enhancing data accessibility
- Provided expert advice to management on automation strategies for streamlined workflows and reduced manual tasks

DATA SCIENTIST | MED-I LAB **|** SEP 2019 – JAN 2022

- Implemented a machine learning-based pipeline in Python, resulting in a 10-30% increase in model performance and successful identification of prognostic factors for patient outcomes in high-dimensional cellular data
- Developed a deep convolutional autoencoder using TensorFlow for automated cell annotation, saving biologists 10+ hours of work and increasing classification accuracy by 3%
- Created TITAN, a program performing all visualization, segmentation, and simple analysis tasks for high-dimensional cellular data, achieving a 14% higher accuracy and 11x faster execution than available software
- Presented findings from all projects at various conferences and published papers in IEEE and Cytometry Part A

TECHNICAL ANALYST | CIBC **|** SEP 2017 – APR 2018

- Assisted in creation of design diagrams and documents for various projects
- Successfully migrated applications to different file transfer protocols
- Monitor resource allocations of various departments and updating accordingly

COMMUNICATIONS ASSISTANT | CANADIAN CANCER SOCIETY **|** JAN 2016 – APR 2016

- Led the Wheels of Hope campaign in multiple elementary schools, resulting in higher participation & fundraising efforts
- Designed and executed a mass email campaign using HTML & CSS, resulting in an increase of 10% in sponsorships

Publications

Thirumal, S., et al. (2022). "Automated Cell Phenotyping for Imaging Mass Cytometry," IEEE Engineering in Medicine & Biology Society (EMBC), 426-429

Thirumal, S., et al. (2022). "TITAN: An End-to-End Data Analysis Environment for the Hyperion™ Imaging System." Cytometry Part A, 101(5), 423-433.

Thirumal, S., et al. (2021). "Utility of High-Throughput Imaging Mass Cytometry for Cancer Research: A feasibility study." IEEE Biomedical and Health Informatics (BHI) (pp. 1-4).

Education

MSC IN COMPUTING | QUEEN'S UNIVERSITY

BSC HONOURS BIOLOGY WITH MINOR IN COMPUTER SCIENCE **|** UNIVERSITY OF WATERLOO

Awards

- Excellence in Customer Service (Health Canada, 2023)
- 3 Minute Thesis Finalist (Queen's University, 2022)
- Best Paper – 2nd Prize (IEEE BHI, 2021)

Technical Skills

- Python: pandas, scikit-learn, TensorFlow **|** SQL | VBA
- Data visualization: seaborn, matplotlib
- Supervised & unsupervised learning methods, neural networks (CNN, autoencoder)