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

Summary

Highly skilled and accomplished data scientist with experience in machine learning, deep learning, and data visualization. Expertise in developing predictive models and data analysis pipelines using Python scikit-learn and TensorFlow. Strong background in biology and computer science, with published papers in IEEE and Cytometry Part A. Strong communication and team-working skills with passion to drive positive change through the use of data-driven insights.

Experience

RESEARCH DATA SCIENTIST | MED-I LAB, QUEEN'S UNIVERSITY **|** 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

LEAD TEACHING ASSISTANT | QUEEN'S UNIVERSITY **|** SEP 2020 – APR 2021

· Provided weekly appointments and 1-on-1 meetings for students, helping over 10 students per week

· Marked over 50 assessments per month and verified the accuracy of other TA's marking for an additional 300+

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

· Successfully led the Wheels of Hope campaign in multiple elementary schools, resulting in increased participation and fundraising efforts

· Skillfully 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 | UNIVERSITY OF WATERLOO

Minor: Computer Science

Awards

· 3 Minute Thesis Finalist (Queen's University, 2022)

· Best Paper – 2nd Prize (IEEE BHI, 2021)

· R. Samuel McLaughlin Fellowship (Queen's University, 2021)

Technical Skills

· Python: pandas, scikit-learn, TensorFlow

· SQL

· R

· Data visualization: seaborn, matplotlib

· Supervised & unsupervised learning methods, neural networks (CNN, autoencoder)