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

Summary

Highly skilled and accomplished data scientist with an M.S. in Computing and 3 years of demonstrated experience in advanced data analytics and machine learning using TensorFlow and scikit-learn. Skilled in Python, SQL, and data visualization libraries like Seaborn and Matplotlib. Proven track record of success in experimentation, analytics, and developing methodologies to improve outcomes, with published papers in high-impact journals. Successful in working effectively with cross-functional teams and driving impact.

Education

MS IN COMPUTING | QUEEN'S UNIVERSITY
BS HONOURS BIOLOGY *MINOR: COMPUTER SCIENCE* | UNIVERSITY OF WATERLOO

Experience

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

- Implemented a machine learning-based pipeline in Python using modern ML methods, 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 learning convolutional autoencoder using TensorFlow for automated cell annotation, saving biologists 10+ hours of work
- Created TITAN, a data analysis 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 documents and diagrams using Visio for various projects
- Facilitated communication and coordination between design team and developers, closely tracking progress of projects
- 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).

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)