Rohit Farmer

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Professional Summary

Self-motivated and a team player with 8 years of post-PhD experience in applying computational methods at the intersection of biology, chemistry, and medicine, resulting in several collaborations and more than 20 peer-reviewed research publications. Google Scholar h-index 11, i10-index 12.

Employments

Computational Biologist, *National Institutes of Health* .....2019 – present

- Developed HDStIM, a novel high-dimensional and unsupervised method for identifying responses to experimental stimulation in mass or flow cytometry.
- Employed HDStIM in several high parameter-based studies, including discovering changes in immunity in a pediatric cohort over 2 to 16 years of age and variance to stimulation in high and low flu vaccine responders and pan monogenic diseases.
- Developed a machine-learning framework for identifying circulating blood proteins predictive of early and late COVID-19 recoverers.
- Developed a novel method for discovering alternative marker(s) in manually gated cell populations in flow cytometry.
- Implemented an automated and high-dimensional analysis pipeline for mass/flow cytometry data.
- Executed a pilot to establish a spatial transcriptomics analysis pipeline.
- Tested and implemented several off-the-shelf analysis pipelines and solutions.

Postdoctoral Research Associate, *Washington University in St. Louis* ..... 2018 – 2019

- Built deep-learning predictive models for drug metabolism and toxicity.
- Routinely built and maintained complex singularity containers for the group.
- Liaise with external organizations and collaborators.

Assistant Professor, *Sam Higginbottom University of Agri., Tech. & Sci.* . 2008-'11, '15-'18

- Taught courses related to computational biology and bioinformatics to undergraduate and master students.
- Developed curriculum and participated in university-wide administrative and research activities.
- Mentored more than ten dissertations.
- Produced students who are now industry leaders and seasoned academics.

Education

Ph.D. Biosciences, *University of Birmingham* 2011-2015
Discovered the fundamental structural and functional relationship of proteins involved in polyketide synthase pathways. Won travel funding to attend several conferences around the globe.

M.Tech. Bioinformatics, *Sam Higginbottom Institute of Agri., Tech., Sci.* 2008-2010
Awarded silver medal and class rank 1. Graduated with 1st division with honors. Carried out a dissertation on statistical analysis of differentially expressed genes due to epigenetic changes.

B.Tech. Biotechnology, *Allahabad Agricultural Institute* 2004-2008
Graduated with 1st division with honors. Carried out final semester project on "Comparative Modelling of Steroidogenic Acute Regulatory Lipid Transfer Domains in *Arabidopsis thaliana*".

Technical Skills

Computational Biology	Flow/mass cytometry, SomaScan, and spatial transcriptomics data analysis, molecular structure prediction, molecular docking, molecular dynamics simulation, and sequence analysis.
Data Science and Machine Learning	• Data wrangling & visualization, feature engineering, dimensionality reduction, supervised & unsupervised learning, linear & mixed-effects modeling, deep-learning • Tidyverse, Lme4, NumPy, Pandas, SciPy, Matplotlib, Seaborn, Plotly, Scikit Learn, Keras, TensorFlow
Programming Languages	R, Python, Perl, C++, LaTeX, HTML, CSS, and Java Script.
Database & containers	SQLite, and Neo4J. Singularity, and Docker.
Operating Systems	Linux, MS Windows, and Mac OS X.

Reference

John S. Tsang, PhD
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