Bobby Ranjan

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Education

European Molecular Biology Laboratory *Rome*
Incoming Predoctoral Fellow (Hackett Group, 2021) Expected Graduation: 2025

Nanyang Technological University (NTU) *Singapore*
Ministry of Education Tuition Grant Recipient
Bachelor of Engineering (Computer Engineering) Graduated in June 2018
Minor in Entrepreneurship
Minor in Life Sciences
GPA: 4.60/5.00

GRE General Test: 162 Verbal, 167 Quantitative, 4.0 Writing March 2019

Vikhe Patil Memorial School *Pune, Maharashtra, India*
Grade 12 | CBSE Board Examinations (A-level equivalent) Graduated in May 2014
School Rank 1 with 96.8%

Selected Publications

- Schmidt, F.*, **Ranjan, B.***, Lin Q.X.X., Krishnan V., Joanito I., ... & Prabhakar S. (2021). RCA2: a scalable supervised clustering algorithm that reduces batch effects in scRNA-seq data. *Nucleic Acids Research*.

- **Ranjan, B.***, Schmidt, F.*, Sun, W., Park, J., Honardoost, M. A., Tan, J., ... & Prabhakar, S. (2021). scConsensus: combining supervised and unsupervised clustering for cell type identification in single-cell RNA sequencing data. *BMC Bioinformatics*, 22(1), 1-15.
  - Selected for **flash talk** at Single Cell Analyses Meeting, CSHL in November 2019.

- **Ranjan, B.**, Sun W., Park J., Xie R., Mishra K., Alipour F., … & Prabhakar S. (2020). DUBStepR: correlation-based feature selection for clustering single-cell RNA sequencing data. *bioRxiv*. (Under review)
  - Received **ISMB Fellowship award** for presenting DUBStepR at ISMB (virtual) in June 2020.
  - Selected for **flash talk** at Human Cell Atlas Asia (virtual) in October 2020.

- Lee, H. O.*, Hong, Y.*, Etlioglu, H. E.*, Cho, Y. B.*, …, **Ranjan, B.**, ... & Park, W. Y. (2020). Lineage-dependent gene expression programs influence the immune landscape of colorectal cancer. *Nature Genetics*, 1-10.

- **Ranjan, B.**, Chong, K. H., & Zheng, J. (2018). Composite mathematical modeling of calcium signalling behind neuronal cell death in Alzheimer's disease. *BMC systems biology*, *12*(1), 10.
  - Selected for **talk** at Asia-Pacific Bioinformatics Conference in April 2018

- **Ranjan, B.** (2018). Detection of functional and topological modules in protein interaction networks. *Final Year Project, Nanyang Technological University*.

Achievements & Awards

ISMB 2021 Fellowship Award| International Society for Computational Biology | June 2021
ISMB 2020 Fellowship Award| International Society for Computational Biology | June 2020
Top 8 & Most Socially Useful Award| NUS Hack & Roll 2018 | January 2018
People's Choice Award | NUS Hack & Roll 2017 | January 2017
President's Research Scholar | NTU | August 2015
Best Freshmen Award | NUS Hack & Roll 2015 | January 2015
All India Rank 1820 | IIT JEE Advanced (India) | May 2014
All India Rank 3 scoring 98.2%| ICSE Board (O-level equivalent) | May 2012

Experience

Bioinformatics Specialist | **Genome Institute of Singapore**   Singapore
August 2018 – Present
Group Leader: Shyam Prabhakar
➢ Led/co-led development of 3 new software approaches to improve clustering for cell type identification in single-cell RNA sequencing (scRNA-seq) data
➢ Analyzed multiple scRNA-seq datasets from cancer and autoimmune patient samples

Software Design Engineer Intern | **BitTitan**   Singapore
May 2017 – August 2017
➢ Built customer-facing license consumption report for all BitTitan products
➢ Conducted tech feasibility analysis to improve BitTitan's reporting capacity
➢ Built code analysis tool to clean up database references across codebase

Technology Analyst Intern **| Bank of America, Merrill Lynch**   Singapore
August 2016 – December 2016
➢ Used message queues to improve efficiency of payment processing system
➢ Built a proof-of-concept (POC) to help onboard new testers onto platform

Skills

➢ **Genomic data analysis:** scRNA-seq • Bulk RNA-seq • scATAC-seq

➢ **Programming languages:** R • Java • Python • C# • C

➢ **Wet lab:** 10X scRNA-seq Chemistry • RNAscope

Hobbies & Interests

Hackathons • Science Communication • Football • Table Tennis • Music

Other Activities

Project Officer | **Stronghold Diagnostics Labs (SDL) [COVID-19 Testing Facility]**
July 2020 – October 2020 | Singapore
➢ Assisted in submission of daily clinical reports for SDL
➢ Performed software integration testing for automated clinical reporting
➢ Developed visualization tools for staff members to communicate and receive updates

Website Manager | **PGMedOnline.com**
January 2018 – Present | India
➢ PGMedOnline is a home-based coaching website for all medical examinations
➢ My responsibilities involve regular website maintenance and liaison with website developers