

BOBBY RANJAN

+65 9647 4046 | bbbranjan@gmail.com | <http://www.bobbyranjan.com>

Education

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, India

Grade 12 | CBSE Board Examinations (A-level equivalent)

Graduated in May 2014

School Rank 1 with 96.8%

Selected Publications

- Lee, H. O.*, Hong, Y.*, Etlioglu, H. E.*, Cho, Y. B.*, Pomella, V., ..., **Ranjan, B.**, ..., Park, W. Y. (2020). Lineage-dependent gene expression programs influence the immune landscape of colorectal cancer. *Nature Genetics*, 1-10.
 - Analysis of 91,103 unsorted single cell transcriptomes from 23 Korean and 6 Belgian CRC patients.
 - Cancer cells displayed normal differentiation programs & genetic alterations that fostered immunosuppressive microenvironments directed by T-reg cells, myofibroblasts and myeloid cells.
- **Ranjan, B.***, Schmidt, F.*, Sun, W., Park, J., Honardoost, M. A., Tan, J., ... & Prabhakar, S. (2020). scConsensus: combining supervised and unsupervised clustering for cell type identification in single-cell RNA sequencing data. *bioRxiv*.
 - Hybrid approach to obtain cell type labels in scRNA-seq data using a consensus of supervised and unsupervised clustering.
 - **Selected for flash talk** at Single Cell Analyses Meeting, CSHL in November 2019.
- **Ranjan, B.**, Chong, K. H., & Zheng, J. (2018). Composite mathematical modeling of calcium signaling behind neuronal cell death in Alzheimer's disease. *BMC systems biology*, 12(1), 10.
 - An integrated mathematical model depicting the relationship among amyloid depositions, calcium signaling and mitochondrial permeability transition pore (PTP) related cell apoptosis in Alzheimer's disease.
 - **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*.
 - Applied module detection and clustering algorithms to identify functionally relevant protein modules in protein-protein interaction networks.

Achievements & Awards

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: Dr. Shyam Prabhakar

Ongoing work:

- DUBStepR: correlation-based feature selection for clustering single-cell RNA sequencing data (manuscript in preparation)
- Robust clustering and interpretation of scRNA-seq data using reference component analysis (manuscript in preparation)

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

- ✓ **Website maintenance** for PGMed Online: a home-based coaching website for all medical examinations
- ✓ **Invited to UC Berkeley** in June 2013 for National Student Leadership Conference (NSLC)
- ✓ **Possesses DELF A2** diploma in French from Ministry of Education, France