

# 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%

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## Selected Publications

- **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.
- Schmidt, F.\*, **Ranjan, B.\***, Lin Q.X.X., Krishnan V., Joanito I., ... & Prabhakar S. (2021). Robust clustering and interpretation of scRNA-seq data using reference component analysis. *BioRxiv*. (Under revision at *Nucleic Acids Research*)
- **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 revision at *Nature Communications*)
  - 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*.

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## Achievements & Awards

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**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

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## Experience

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**Bioinformatics Specialist | Genome Institute of Singapore**

Singapore

August 2018 – Present

Group Leader: Dr. 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
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## Skills

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- **Genomic data analysis:** scRNA-seq • Bulk RNA-seq • scATAC-seq
  - **Programming languages:** R • Java • Python • C# • C
  - **Wet lab:** 10X scRNA-seq Chemistry • RNAscope
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## Hobbies & Interests

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Hackathons • Science Communication • Football • Table Tennis • Music

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## Other Activities

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**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