

# Bobby Ranjan

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## Education

### European Molecular Biology Laboratory (EMBL)

Predoctoral Fellow

Supervisor: Jamie Hackett

*Rome, Italy*

September 2021 - Present

### Nanyang Technological University (NTU)

Ministry of Education Tuition Grant Recipient

Bachelor of Engineering (Computer Engineering)

Minor in Entrepreneurship

Minor in Life Sciences

GPA: 4.60/5.00

*Singapore*

Graduated in June 2018

### Vikhe Patil Memorial School

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

School Rank 1 with 96.8%

*Pune, Maharashtra, India*

Graduated in May 2014

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## Selected Publications

- **Ranjan, B.**, Sun W., Park J., Xie R., Mishra K., Schmidt, F., ... & Prabhakar S. (2021). DUBStepR is a scalable correlation-based feature selection method for accurately clustering single-cell data. *Nature Communications* **12**, 5849.
  - 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.
- 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.
  - Received **ISMB Fellowship award** for presenting scConsensus at ISMB (virtual) in June 2021.
  - Selected for **flash talk** at Single Cell Analyses Meeting, CSHL in November 2019.
- 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 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

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## Experience

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### Bioinformatics Specialist | Genome Institute of Singapore

Singapore

August 2018 – July 2021

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

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## Skills

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- **Data Analysis:** RNA & ATAC seq (sc & bulk) • Machine Learning
- **Computer Science:** R • Python • Java • Web dev (HTML5, CSS3, JS)
- **Lab Techniques:** Certified in animal handling

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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 – June 2021 | India

- PGMedOnline is a home-based coaching website for all medical examinations
- My responsibilities involve regular website maintenance and liaison with website developers