BOBBY RANJAN

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Education

Nanyang Technological University
MOE Tuition Grant Recipient
B.Eng. in Computer Engineering
Minors in Entrepreneurship & Life Sciences
CGPA - 4.60/5.00 | June 2018

Vikhe Patil Memorial School
Grade 12 | CBSE Board Examinations (A-level equivalent) | Science Stream
School Topper with 96.8% | May 2014

Skills

Programming Languages:
R • Java • Python • C# • C
Web Development:
HTML5 + CSS3 • JavaScript • jQuery • Bootstrap • PHP • JSP • Django • AngularJS • Node.js • MongoDB

Co-Curricular Activities

IEEE NTU Student Branch | Vice President
NTU Sikh Society | Publicity Director
NTU Model United Nations | Media
NTU Students' Union | Events Director

Selected Courses

Biostatistics
Biochemistry
Molecular & Cell Biology
Principles of Genetics
Machine Learning
Computer Vision
Advanced Algorithms
Distributed Systems
Information Retrieval
Operating Systems
Introduction to Databases
Digital Systems Design
Software Engineering
Sensors, Interfacing & Control Systems
Computer Networks
Entrepreneurship for New Ventures

Interests

Computational Biology • Immunology • Hackathons • Science Communication • Football • Table Tennis • Singing

Fun Facts

✓ Invited to UC Berkeley in June 2013 for National Student Leadership Conference (NSLC)
✓ Possesses DELF A2 diploma in French from Ministry of Education, France

Selected Publications

Lee, H.-O., Hong, Y., Etlioglu, H., Cho, Y.B., et al. **Lineage-dependent gene expression programs influence the immune landscape of colorectal cancer.** *Nat. Genet.* **In Press** (2020).
- Analyzed scRNA-seq data from 29 patients (91k cells) to investigate the cellular landscape and intercellular interactions in colorectal cancer.

Ranjan, B., Schmidt, F., et al. 2020. **scConsensus: combining supervised and unsupervised clustering for cell type identification in single-cell RNA sequencing data.** *bioRxiv.* doi: 10.1101/2020.04.22.056473.
- Hybrid approach to obtain cell type labels in scRNA-seq data using a consensus of semi-supervised and unsupervised clustering.
- **Selected for flash talk** at Single Cell Analyses Meeting, CSHL in Nov. 2019.

Ranjan, B., Chong, K. & Zheng, J. **Composite mathematical modeling of calcium signaling behind neuronal cell death in Alzheimer's disease.** *BMC Syst Biol* **12**, 10 (2018). https://doi.org/10.1186/s12918-018-0529-2.
- An integrated mathematical model to analyze and understand 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 Apr. 2018

Bobby Ranjan. **Detection of functional and topological modules in protein interaction networks** | Final Year Project, NTU | May 2018
- Applied module detection and clustering algorithms to help researchers identify significant modules in Protein Interaction Networks (PIN).
- http://hdl.handle.net/10356/73997

Experience

Bioinformatics Specialist | Genome Institute of Singapore
August 2018 – Present | Singapore
- Developing algorithms for cell type identification in single-cell data

Software Design Engineer Intern | BitTitan
May 2017 – August 2017 | Singapore
- 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
- Tech stack includes C#, SQL and Microsoft Roslyn

Technology Analyst Intern | Bank of America, Merrill Lynch
August 2016 – December 2016 | Singapore
- Used message queues to improve efficiency of payment processing system
- Built a proof-of-concept (POC) to help onboard new testers onto platform
- Tech stack includes AngularJS, Java Spring, ActiveMQ, MyBatis & SQL

Summer Intern | Asia Risk Transfer Solutions (ARTS)
May 2016 – July 2016 | Singapore
ARTS aims to help create risk transfer products for developing communities in Asia
- Developed 2 MVP Android applications for different user groups
- Tech stack includes Java, Android and Django

Achievements & Awards

Top 8 & Most Socially Useful Award| NUS Hack & Roll 2018 | January 2018
People's Choice Award | NUS Hack & Roll 2017 | January 2017
Best Freshmen Award | NUS Hack & Roll 2015 | January 2015
President's Research Scholar | NTU | August 2015 – June 2016
All India Rank 1820 | IIT JEE Advanced (India) | May 2014
All India Rank 3 scoring 98.2%| ICSE Board (O-level equivalent) | May 2012