Hrushikesh Loya — Curriculum Vitae

Contact

EE Department, IIT Bombay
Powai, Mumbai, 400076
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Interests

Computational Biology, Bioinformatics, Cancer Genomics, Machine Learning

Education

Indian Institute of Technology, Bombay, Mumbai, India — Jul 2015 – Jun 2020
Bachelor and Master of Technology in Electrical Engineering
Specialization in Communications and Signal Processing
Honors in Electrical Engineering with Major Cumulative GPA of **9.48/10**
Minor in Computer Science & Engineering

National University of Singapore, Singapore — Aug 2018 – Dec 2018
TFI-LEaRN Semester Exchange Program
Electrical Engineering and Computer Science with Cumulative GPA of **9.8/10**

Publications

Bayesian Framework for Cancer Survival Prediction — Nov 2019
Annals of Oncology
Hrushikesh Loya, Deepak Anand, Pranav Poduval, Neeraj Kumar and, Amit Sethi

Phenotype Switching during TNFα - TNRF1 Signaling — Oct 2019
Best Poster Award 9th Nextgen Genomics, Biology, Bioinformatics and Technologies Conference
Shubhank Sherekar*, Sonal Manohar*, **Hrushikesh Loya***, Sharmila Biswas, Reshma Patil, Ganesh Viswanathan

Phenotype Switching during Tumor Necrosis Factor alpha signalling — May 2019
17th international TNF Superfamily conference
Shubhank Sherekar*, Sonal Manohar*, **Hrushikesh Loya***, Reshma Patil, Ganesh Viswanathan

Under Review

Stochastic Activation and Bistability in a Rab GTPase Regulatory Network
In review for Proceedings of the National Academy of Sciences of the United States of America
Urban Bezaljak, **Hrushikesh Loya**, Beata Kaczmarek, Martin Loose, Timothy Saunders

Mixture Distributions for Scalable Bayesian Inference
In review for 8th International Conference on Learning Representations (ICLR)
Pranav Poduval, **Hrushikesh Loya**, Rajat Patel, Sumit Jain

Research Experience

Bayesian Framework for Cancer Survival Prediction and Prognosis
Electrical Engineering, IIT Bombay — Apr 2019 – Present
Master's Thesis; Advisor: Prof. Amit Sethi
Built an end-to-end pipeline for uncertainty estimation in cancer survival prediction using genomics information and some clinical features available in TCGA-BRCA

Stochastic Activation and Bistability in a Rab GTPase Regulatory Network
Mechanobiology Lab, National University of Singapore — Jul 2018 – Aug 2019
Guide: Prof. Timothy Saunders
Stochastic and deterministic reaction diffusion modeling and in-vitro experiments help discover the positive feedback present in Rab5 activation switch

Phenotype Switching during Tumor Necrosis Factor alpha signalling
Biomolecular Engineering Lab, IIT Bombay — Dec 2017 – Dec 2018
Guide: Prof. Ganesh Viswanathan
Designed community detection algorithms which takes care of functional commonality of proteins in the hand-crafted protein-protein interaction network for TNF alpha signaling

*Equal Contribution

Image Analysis and Modelling of pattern formation in Hibiscus petals
University of Cambridge May 2018 – Aug 2018
Guide: Prof. Edwige Moyroud
Developed Image processing pipeline and computational spatio-temporal models to quantify and explain the red bull's pattern in Hibiscus Trionum petals

Academic Honors

Recipient of the **Institute Academic Prize** at IIT Bombay 2016 – 2017
For being one of the top two in the department based on a year's performance

Among **top 3** in Electrical Engineering batch of 82 students

Awarded **TFI-LEaRN Scholarship** for semester exchange in NUS Jul 2018 – Dec 2018
1 out of 45 scholars from Asia to be recognized as Leaders of tomorrow

Awarded an **A+ Grade** in **3 courses**
Grade awarded to a select few for **exceptional performance** in a course
In Biopotential I: Cellular Signals, Computer Vision, and Introduction to Computational Biology

Teaching Experience

BB101: Introduction to Biology
Department of Biosciences and Bioengineering, IIT Bombay Spring 2017
Teaching Assistant with Prof. Ambarish Kunwar and Prof. Rohit Manchanda for first year UGs

MA205: Complex Analysis
Department of Mathematics, IIT Bombay Autumn 2018
Teaching Assistant with Prof. Sudarshan Gurjar for second year Engineering UGs

MA207: Partial Differential Equations
Department of Mathematics, IIT Bombay Autumn 2018
Teaching Assistant with Prof. Ronnie Sebastain and Prof. Manoj Keshari for Engineering UGs

EE308: Communication Systems
Department of Electrical Engineering, IIT Bombay Autumn 2019
Teaching Assistant with Prof. Gaurav Kasbekar for third year Electrical Engineering UGs

Campus Activities/ Positions Held

Biotech Club Manager
Institute Technical Council Apr 2017 – Apr 2018
Part of 55 member council responsible for developing and promoting technical activities in institute
Headed team of 3 conveners with aim of promoting events and projects in interdisciplinary Biology

Marketing Coordinator
Techfest, IIT Bombay Apr 2016 – Dec 2016
Guided and coordinated with a team of 10 students to procure sponsorships worth INR 1 million
Assisted in setting up 150+ Diabetes Screening Camps to spread awareness among 100,000+ people

Volunteered in **National Social Service, India** to promote a green campus

Administered installation of bouldering wall & facilitated camps for 800+ enthusiasts

Academic Domain

Probability and Statistics
Advanced Concentration Inequalities, Probabilistic Models, Probability and Random Processes, Data Analysis and Interpretation, Introduction to Fuzzy / Neural Systems, Science of Information, Statistics, & Learning, Advanced Topics in Machine Learning

Computer Science
Data Structures and Algorithms, Operating Systems, Discrete Structures, Logic for Computer Science, Computer Vision and Pattern Recognition

Biology
Introduction to Biology, Introduction to Computational Biology, Medical Image Computing, Biopotentials I: Cellular Signals, Medical Sensors

References

Prof. Amit Sethi
Electrical Engineering
IIT Bombay
Webpage | Email

Prof. Timothy Saunders
Mechanobiology Lab
NUS
Webpage | Email

Prof. Edwige Moyroud
SLCU
University of Cambridge
Webpage | Email