Hrushikesh Loya

Contact | EE Department, IIT Bombay

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Webpage: hrushikeshloya.github.io

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

Uncertainty Estimation in Cancer Survival Prediction

Feb 2020

8th International Conference on Learning Representations (ICLR) Workshop **Hrushikesh Loya**, Pranav Poduval, Deepak Anand, Neeraj Kumar, Amit Sethi

Stochastic Activation and Bistability in a Rab GTPase Regulatory Network \S Jan 2020

Proceedings of the National Academy of Sciences of the United States of America Urban Bezaljak, **Hrushikesh Loya**, Beata Kaczmarek, Martin Loose, Timothy Saunders

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 TNF α - TNRF1 Signaling ${}^{\bullet}$

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

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. An	nit Sethi
Electrical	Engineering
IIT Bombay	
Webpage	Email

Prof. Timothy Saunders
Mechanobiology Lab
NUS
Webpage Email

Prof. Edwige Moyroud
SLCU
University of Cambridge