

Pranav Ballaney

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EDUCATION

Birla Institute of Technology and Science, Pilani

Master of Science in Biological Sciences

Bachelor of Engineering in Computer Science

Goa, India

Aug. 2018 – July 2023

Cumulative GPA: 9.24/10

RESEARCH EXPERIENCE

Purdue University, USA

Research Intern at the Purdue Institute for Drug Discovery

Currently working on drug discovery through computational methods under the supervision of Prof. Philip Low, Presidential Scholar for Drug Discovery. My research aims to identify drug targets through the analysis of single-cell data and accelerate virtual screening through deep learning.

September 2022 – Present

Western University, Canada

Visiting Research Student under the Mitacs Globalink Research Internship Program

Performed molecular dynamics simulations of ionised protein droplets to understand their evolution using NAMD under the supervision of Prof. Styliani Conostas, Department of Chemistry, Western University. Article in preparation.

June 2022 – August 2022

CSIR - Institute of Genomics and Integrative Biology

Carried out molecular dynamics simulations of autophagic complexes to understand the formation of autophagosomes under the guidance of Dr. Lipi Thukral, Senior Scientist at the Computational Structural Biology lab.

February 2021 - July 2021

PUBLICATIONS

Mishra, B., Ballaney, P., Saha, G., Shinde, A., Banerjee, S., Thimmakondur, V. S., & Aduri, R. (2022).

An *in-silico* discovery of potential 3CL protease inhibitors of SARS-CoV-2 based upon inactivation of the cysteine 145-Histidine 41 catalytic dyad.

Journal of Biomolecular Structure and Dynamics, 1–20.

<https://doi.org/10.1080/07391102.2022.2047108>

WORK EXPERIENCE

National Resource for Network Biology

Student Developer under Google Summer of Code 2021 at Keio University, Japan

Developed a simulator for SBML models, along with parsers for SBML and MathML in Rust, under the guidance of Prof Akira Funahashi, Department of Biosciences and Informatics. The simulator applies the Runge-Kutta and Runge-Kutta-Fehlberg methods for numerical integration of ODEs in an SBML model.

May 2021 – August 2021

[\(Link to Project\)](#)

Debian

Student Developer under Google Summer of Code 2020

Designed test suites for over 40 applications in bioinformatics, performed bug fixes, and added packages to Debian repositories.

May 2020 – August 2020

[\(Link to Project\)](#)

SCHOLARSHIPS AND AWARDS

iGEM Competition 2020

Software Team Lead, iGEM BITS Goa

Awarded the gold medal along with Special Prizes for Best Software Tool and Best Composite Part at the International Genetically Engineered Machine competition for designing a genetically engineered bacterial system to reduce post-harvest losses in sugarcane, under the supervision of Dr. Sumit Biswas.

November 2019 – November 2020

[\(Link to Project\)](#)

Institute Merit-cum-need Scholarship, BITS Goa

August 2018 - Present