

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 and Engineering
Cumulative CGPA: 9.16/10

Goa, India
Aug. 2018 – May 2023 (expected)

Delhi Public School, Indira Nagar
All India Senior Secondary Certificate Examination
Percentage: 89.4%

Lucknow, India
Graduated May 2017

WORK EXPERIENCE

Debian
Student Developer under Google Summer of Code 2020

May 2020 – August 2020
[\(Link to Project\)](#)

- Worked on quality assurance and continuous integration of applications in life sciences and medicine.
- Designed test suites for over 40 applications in bioinformatics, performed bug fixes and added several new packages to the Debian operating system.

RESEARCH EXPERIENCE

iGEM Competition 2020, BITS Goa
Software Team Lead

November 2019 – November 2020
[\(Link to Project\)](#)

- Awarded the **Gold Medal** along with two Special Prizes for Best Software Tool and Best Composite Part
- Worked under the supervision of Dr. Sumit Biswas, as part of the first iGEM team from BITS Goa, on reduction of post-harvest losses in sugarcane, by using genetically engineered bacterial systems.

CSIR - Institute of Genomics and Integrative Biology

February 2021 - Present

Currently working on molecular dynamics simulations of membranes involved in autophagocytosis, under the guidance of Dr. Lipi Thukral, Senior Scientist at the Computational Structural Biology lab.

RNA Secondary Structure Prediction

January 2021 - Present

Currently working on evaluation and extension of computational tools used to predict RNA secondary structures, under the guidance of Dr. Raviprasad Aduri.

CSIR - Institute of Genomics and Integrative Biology
Research Intern

May 2020 – June 2020

- Worked under the guidance of Dr. Lipi Thukral, to quantify interactions between the SARS CoV2 spike glycoprotein and the human ACE2 receptor.
- Built visualizations using comparative force-directed graphs to understand these interactions.

Study Oriented Project

January 2020 - April 2020

Worked under the supervision of Dr. Sumit Biswas, on tissue-specific re-evaluation of the efficacy of MicRoOn in identifying miRNAs associated with cancer, using machine learning techniques.

PROJECTS

iGEM WikiSync and the iGEM Wiki Starter Pack | *Python, Node.js*
Developed software to help iGEM teams build their wikis. Adopted by several iGEM teams throughout the competition season and awarded the **Best Software Tool** Special Prize at iGEM 2020.

June 2020 – Present
iGEM WikiSync
iGEM Wiki Starter Pack

CERTIFICATIONS

Deep Learning Specialization
deeplearning.ai on Coursera

May 2019
[\(Certificate\)](#)

TECHNICAL SKILLS

Languages: Python, C, C++, Java, Rust, HTML, CSS, JavaScript, Bash

Frameworks: Flask, jQuery, NumPy, Pandas, Scikit-Learn, ProDy

Bioinformatics: Protein modelling, docking and secondary structure prediction

RELEVANT COURSES

Biology: Biochemistry, Microbiology, Cell and Molecular Biology, Bioinformatics, Genetics, Recombinant DNA Technology, Immunology, Biophysics, Developmental Biology

Mathematics: Mathematics I (Multivariable and Vector Calculus), Mathematics II (Linear Algebra and Complex Analysis), Mathematics III (Differential Equations), Probability and Statistics

Computer Science: Object Oriented Programming, Data Structures and Algorithms, Database Management Systems

OTHER EXPERIENCE

Peer Mentor as a part of the Peer Mentorship Program at BITS Pilani, helping students navigate through college and looking after their academic and personal interests.

SCHOLARSHIPS AND AWARDS

- Received institute scholarship at BITS Pilani for each semester in college.
- Received a Letter of Appreciation from Union Minister of Education for obtaining a CGPA of 10 in 10th Standard Board Examinations.

EXTRA-CURRICULAR ACTIVITIES

- Core member at Synchronoise, the BITS Goa a cappella club.
- Core member at Srutilaya, the BITS Goa classical music club.