



Pranjal Jain
Electrical Engineering
Indian Institute of Technology, Bombay

170070030
B.Tech.
Gender: Male
DOB: 01-06-1999

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	8.78

Pursuing a **Minor in Computer Science and Engineering**

PUBLICATIONS

- **Pranjal Jain**, Atul Sharma, Kanak Mahadik, Somali Chaterji, "Prometheus: Transformer Architectures for Configuring Error Correction Tools for Short- and Long-Read Sequencing Technologies" manuscript submitted and under review at **Computational and Structural Biotechnology Journal**
- Michael Roth, Jinkyu Koo, **Pranjal Jain**, Somali Chaterji, "THEIA: Simultaneous learning of individual microRNA-gene interactions and regulatory comodules" manuscript submitted and under review at **Nature Scientific Reports**

SCHOLASTIC ACHIEVEMENTS

- Awarded the **KVPY Fellowship** by the Department of Science and Technology, Government of India (2016)
- Received an **AP** grade in **EE236: Electronic Devices Lab** (given to **top 1%** students) (2018)
- Ranked **first** on a Kaggle competition organised through **CS419: Introduction to Machine Learning** (2020)

PROJECTS AND INTERNSHIPS

Secure activity recognition through Federated Learning (July'20-Present)

Bachelor's Thesis Guide: Prof. Biplab Banerjee, Prof. Saurabh Bagchi, Prof. Subhasis Chaudhuri

The project is a joint effort with professors from the **Department of Electrical and Computer Engineering, Purdue University**

- Supported by a **\$5 million** grant from the **US Federal Government** for research on **secure federated learning**
- Applied **knowledge distillation** on compressed models to mimic larger **3D Channel-Separated Networks**
- Designed the training process to ensure **data privacy** of edge devices
- Ensured **fidelity** of the global model in the event of **collusion** between multiple devices

Automatic parameter configuration of Genome error correction tools (Jan'20-Aug'20)

Purdue University

Guide: Prof. Somali Chaterji

- Outperformed previous **state-of-the-art Athena**
- Leveraged **Just-in-Time compilers** to reduce inference times by **18x**

Simultaneous learning of individual microRNA-gene regulatory comodules (Jan'20-Aug'20)

Purdue University

Guide: Prof. Somali Chaterji

- Grouped functionally related miRNAs and genes via **non-negative matrix factorization (NMF)**
- Surpassed **SNMNF, PIMiM and Tiresias** by achieving **Adjusted Rand Index (ARI)** scores of up to **0.8**

Matsya, Autonomous Underwater Vehicle (AUV) (2017-18)

RoboSub, AUVSI & US Office of Naval Research

AUV-IITB is an interdisciplinary team which competes at RoboSub, California and at NIOT-SAVe, Chennai

- Implemented a **PID-based control algorithm** for a **robotic arm**
- Abstracted a sketch for a **Battery Management System** using **CAN (Controller Area Network)**

MENTORSHIP AND LEADERSHIP ROLES

Head | Department Academic Mentorship program, Electrical Engineering (April'20-Present)

- Handpicked a team of **35** mentors from **90** applicants after an extensive interview and peer review process
- Restructured the team with a **3 member cabinet** to ensure smooth execution of initiatives
- Addressed issues regarding the unprecedented event of mentoring in an **online setting**

Institute Student Mentor | Student Mentorship Program (July'19-Present)

- **One of 13** third-year students selected based on a rigorous procedure comprising of an interview and peer review
- Mentored **12 freshmen** during the previous tenure

Teaching Assistant | CH107: Physical Chemistry (2018)

- Responsible for conducting weekly doubt clearing sessions for approximately **300 freshmen**

CERTIFICATIONS

Equity Portfolio Management | NSE Academy (May'20-July'20)

- Awarded **Grade A** for exceptional performance in the course
- Studied and deployed strategies like **Momentum, Pairs Trading and Value Investing** on a virtual platform

EXTRACURRICULARS

- **Gold** in the **Basketball** General Championships, IIT Bombay (2019)
- **Bronze** in the **Hockey** General Championships, IIT Bombay (2019)
- Selected to be a part of the **Inter-IIT training camp** for **Athletics (Long distance running)** (2017-18)
- Selected to be a part of the **Inter-IIT training camp** for **Basketball** (2017-18, 2018-19)
- Completed **10 kilometers of swimming** in **8.06 hours** at the annual Swimathon (2019)
- Participated in **Aavhan**, the sports festival of IIT, as a part of the **institute basketball team** (2018)

Scholastic achievements and extracurricular activities are not verified by the Placement Cell