Tamoghno Pramanik
Civil Engineering
Indian Institute of Technology, Bombay

170040098
B.Tech.
Gender: Male
DOB: 03-04-1999

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	
Intermediate	CBSE	Bhavan's Gangabux Kanoria Vidyamandir	2017	93.20%
Matriculation	CBSE	Bhavan's Gangabux Kanoria Vidyamandir	2015	10

Minor: Computer Science & Engineering | **Key courses**: Operating Systems, Computer Networks*, Data Structures & Algorithms

ACADEMIC ACHIEVEMENTS

- Currently among the top **15%** of the department academically; awarded **14 AAs** in the core courses
- Recipient of the prestigious **NTSE** Scholarship by Govt. of India, awarded to the top **1000** out of **900K+** applicants ['15]
- Secured **AIR-201** and honoured with the **KVPY** fellowship by the Department of Science and Technology, Govt. of India ['15]
- Obtained **99.78** percentile out of **1.2M+** aspirants in the Joint Entrance Examination **(JEE) - Mains** ['17]
- Secured **98.99** percentile out of **220K+** aspirants in the Joint Entrance Examination **(JEE) - Advanced** ['17]
- Achieved **AIR 52** out of **117K+** applicants in the West Bengal Joint Entrance Examination ['17]
- Attained **AIR 62** out of **420K+** applicants in the National Level Science Talent Search Examination ['15]

PROFESSIONAL EXPERIENCE

WALMART GLOBAL TECHNOLOGY SERVICES INDIA | SOFTWARE ENGINEER [Apr'20-July'20]
Gaining insights and deriving continuous measurements from velocity interleaving test data in the search domain

Approach	• Facilitated data extraction and processing using **GCP DataProc** accessing **Hadoop** clusters on a **GCS** system • Pre-processed raw data obtained from Hadoop clusters, and, analysed & plotted the results using **Python** • Built a pipeline to track & synchronize the processes; visualized them on the **Grafana** interactive platform
Impact	• Developed a tool to showcase a YoY improvement of over **140%** in the search experimentation platform • Automated the data pipeline to enable extraction and storage of transformed data into a **MySQL** database

BEWAKOOF BRANDS | DATA ANALYST [May'19-July'19]
*Awarded **Letter of Recommendation** | Building a performance-based allocation system to facilitate last-mile delivery of products*

Approach	• Implemented a **R Shiny** app-based **recommendation panel** to find the optimal crowdsourcing partners • Employed multi-objective **NSGA(II)** algorithm to find ideal delivery choices on the pareto efficient frontier
Impact	• Customized the panel to allow the user to choose among the ideal **time and cost-efficient** solutions • Achieved **10-15%** logistics cost reduction & **20%** performance improvement on a **₹40M+** sales volume

KEY PROJECTS

BAMBOO BASED CELLULAR TOWER | CENTRE FOR TECHNOLOGY ALTERNATIVES FOR RURAL AREAS, IIT BOMBAY [Jan'20-Jun'20]
Advisor: Prof. Siddhartha Ghosh, Department of Civil Engineering, IIT Bombay

Approach	• Identified key construction and logistical challenges by surveying local bamboo marts of South Mumbai • Designed the structural framework (truss, pipe etc.) of bamboo-based communication tower using **STAAD**
Impact	• Presented **low-cost** sustainable solution to employ unskilled labours for rural areas of Palghar (Maharashtra)

BITGRIT DATA SCIENCE CHALLENGE | 8TH INTER-IIT TECH MEET, IIT ROORKEE [Jul'19-Dec'19]
*Part of the **50-member** contingent representing IIT Bombay against **22** competing IITs*

- Forecasted **exchange rates** using **SVR** to hedge currency risks on a market size of **$500B+**; achieved an E^{-RMSE} error of **0.98**
- Analysed the **employee attrition data** to present useful correlations and features to facilitate employee fitness & efficiency

SPACECRAFT MODELLING, RENDERING, LAUNCH & ANIMATION | COURSE PROJECT [Aug'19-Dec'19]
Advisor: Prof. Parag Chaudhary, Department of Computer Science & Engineering, IIT Bombay

- Programmed the spacecrafts' custom trajectory cameras encompassing Bezier space curves & real-time coordinate system
- Designed shader programs to render outer space cubemap, earth and launch vehicle; used **blender** to design textured models

COMMUNICATING MENTAL HEALTH THROUGH DESIGN | COURSE PROJECT [Aug'19-Dec'19]
Advisor: Prof. Nina Sabnani, Industrial Design Centre, IIT Bombay

- Improved the medical accessibility for the students by building a mobile app to communicate mental health issues in institute
- Created an app questionnaire to gather insights on mental health; surveyed **200+** students to improve the app features

HYDRAULIC & ENERGY GRADE LINE PLOTTER | COURSE PROJECT [Jan'19-Apr'19]
Advisor: Prof. Riddhi Singh, Department of Civil Engineering, IIT Bombay

- Analysed real-life models of hydraulic pipe flow system incorporating graphical interpolation of discharge & head parameters
- Programmed and plotted the solutions of the real-life problems using **C++ and Python;** achieved **95%** accuracy in the results

ROBOT GOALKEEPER | INSTITUTE TECHNICAL SUMMER PROJECT, IIT BOMBAY [May'18-July'18]
- Administered **image processing** with stereo cameras to track & intercept the motion of moving ball; **85%+** accuracy achieved
- Processed the stereo data using **MATLAB** to direct and signal the moving arm using **Arduino** controlled stepper motor driver

KILLER SUDOKU | COURSE PROJECT [Jan'18-Apr'18]
Advisor: Prof. Krishna S, Department of Computer Science & Engineering, IIT Bombay
- Programmed a **Killer Sudoku** solver using cage-wise **backtracking** algorithm; solved the worst-case problem in less than **1 sec**

TECHNICAL SKILLS

Languages	• C, C++, Python, MATLAB, OCTAVE, HIVE, R, MySQL
Libraries/Tools	• OpenGL, Apache Spark, Hadoop, Pandas, NumPy, Seaborn, Matplotlib, Arduino, Shiny, Grafana
Software	• GIT, LATEX, SOLIDWORKS, AutoCAD, STAAD, Blender, Vensim, MS-Office, Adobe Premiere Pro

COURSES UNDERTAKEN

Computer Science	• Computer Programming & Utilization, Introduction to Machine Learning, Data Structures & Algorithms, Algorithms & Complexity, Computer Graphics, Operating Systems, Computer Networks, System Dynamics: Modeling & Simulation for Development
Department Courses	• Engineering Mechanics, Solid Mechanics, Fluid Mechanics, Building Materials & Construction, Structural Mechanics, Applied Hydrological Engineering, Engineering Survey, Geotechnical Engineering, Transportation Engineering, Applied Geology for Civil Engineers, Structural Design, Traffic Engineering*, Construction Management*, Foundation Engineering*, Water Resources Engineering*, Probabilistic & Statistical Methods in Civil Engineering* • Solid Mechanics Lab, Fluid Mechanics Lab, Hydraulic Engineering Lab, Engineering Surveying Practical, Transportation Engineering Lab, Geotechnical Engineering Lab, Estimation & Materials Testing Lab
Miscellaneous	• Quantum Physics & Application, Calculus, Physical Chemistry, Organic & Inorganic Chemistry, Biology, Basics of Electricity & Magnetism, Differential Equations, Linear Algebra, Economics, Introduction to Electrical & Electronics Circuits, Environmental Studies, Sociology, Understanding Design • Engineering Graphics & Drawing, Chemistry Lab, Physics Lab, Workshop Practice

LEADERSHIP EXPERIENCE

HULT PRIZE, IIT BOMBAY | CO-FOUNDER & CO-DIRECTOR [Sep'19-Jan'20]
World's Biggest Social Entrepreneurship Competition | United Nations & Bill Clinton Foundation Flagship Initiative | Prize Money $1M

Work Highlights	• Affiliated with **25+ VC**s, angel investors & business heads to aid mentoring & judging for pitching round • Spearheaded a two-tier team of **15+** students to facilitate on-ground execution & planning for the event • Raised sponsorships of ₹**100K** in cash & ₹**100K** in-kind; saved **65%** of the expenditure through barter deals
Impact	• Registered a participation of **150+** students in **40+** teams for the inaugural edition of the pitching event • Successfully reached an audience of over **100K** through press releases and extensive post-event publicity

HOSTEL 2, IIT BOMBAY | MUSIC SECRETARY [Aug'18-May'19]
- Led a **10**-member hostel music band and secured **5th** position among **18** hostel bands in the Music Arcade competition
- Ideated the musical segment and songs to help secure **1st position** in the Dramatics GC and **1st position** in the PAF *Kuttay*

MOOD INDIGO, IIT BOMBAY | LOGISTICS & OPERATIONS COORDINATOR [Aug'18-Dec'18]
Asia's largest college cultural fest with a 1,43,000+ footfall | 210+ events | 200+ international artists
- Negotiated a ₹**250K+** monetary deal with a transportation vendor catering to over **600** artists at **15%** lower than market rates
- Led a team of **10+** organizers to successfully manage the logistical challenges associated with the external transport sector

EXTRA CURRICULARS

Sports	• Awarded **'A'** Grade in the **B-Certificate** examination of **NCC** (National Cadet Corps)	['19]
	• Secured **10th** position in the Freshers Crossy General Championship among **200+** runners	['17]
	• Performed **Republic Day** parade on **26th** of January in front of a **500+** audience	['17]
	• Awarded the **Best Athlete of The Year** 2016-17 in school among **3000+** students	['17]
	• Secured **3rd** place in the **U-19 800m** running in the sub-divisional category out of **50+** schools	['16]
Social Impact	• Assisted in solar workshops (**SoULS**) catering to **5000+** destitute students; **Guinness World Record**	['18]
	• Worked in a team of **25** to improve the physical accessibility of buildings in IIT Bombay for the disabled, a collaborative initiative of the social body of IIT Bombay with the J.J School of Architecture	['17]
	• Received certificate from **HelpAge** India for raising awareness and funds for the care of elderly	['17]
Miscellaneous	• Acted & edited for the **3rd** place winning film in the Freshiezza Film Making Competition	['17]
	• Selected for the **state level** Spelling Bee competition as a part of the school team	['15]
	• Took a professional training in **fine arts** and **keyboard** for a period of 2 years	['15]
	• Achieved international rank **77** in the 2nd Stage of the National Science Olympiad by SOF	['15]
Interests	• Reading, Swimming, Running, Trekking, Visiting New Places	

*To be completed by Nov'20