

Samarth Sharma Bhardwaj

Second Year Undergraduate (Sophomore)
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Indian Institute of Technology, Kanpur

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Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2023 - Present	B.Tech	Indian Institute of Technology, Kanpur	8.46/10.0
2023	CBSE(XII)	Hope Hall Foundation School (HHFS), Delhi	96.8%
2021	CBSE(X)	Delhi Public School, Prayagraj	97.6%

Scholastic Achievements

- Secured **All India Rank 1082** in **JEE Advanced 2023** among 200,000 shortlisted candidates.
- Secured **All India Rank 954** in **JEE Mains 2023** (~ 99.926 percentile) among 1.5 million registered candidates.
- Awarded Academic Excellence Award for exceptional academic performance in Class XII board exams and JEE, HHFS, Delhi
- Awarded Academic Excellence Award - Merit for exceptional academic performance in the session 2019-20, DPS, Udhampur
- **Positions of Responsibility** - i. Secretary, Quiz Club, IITK (2024-25) ii. Secretary, Debating Society IITK (2024-25)
- **Academic Mentor** of PHY114 (Quantum Physics) under the Institute Counseling Service. Mentored freshmen and taught remedial classes to guide them throughout their first year. (2024-25 Tenure)

Key Projects

- **Developing sensitive and efficient photodetectors at RT** (Dec'24- Present)
Prof. Rituraj, Dept of EE, IIT Kanpur
 - Studied various aspects and physics behind photodetectors and quantum photonics.
 - We used DEVSIM TCAD semiconductor simulator library in Python intensively to observe the IV characteristics to identify the material most suitable to develop an efficient photodetector at room temperature.
- **Audio Classification and Signal Processing using Deep Learning** (Dec'24- Feb'25)
Electrical Engineers' Association, IIT Kanpur
 - Built a CNN-based model to detect deepfake audios from those generated by humans with >80% accuracy.
 - Built, trained, and tested models using CNNs and RNNs to classify audio signals. Tuned hyperparameters for better accuracy.
 - Key features like MFCCs and chroma features were extracted to prepare audio data for ML models.
- **Fact Filter using NLP** (May'24- Jul'24)
Public Policy and Opinion Cell, IIT Kanpur
 - Developed a fact filter machine learning model that can reliably differentiate between authentic and fraudulent news stories.
 - The model was trained on data sets of real and fake news articles, using machine learning and natural language processing (NLP) techniques to extract features and classify news articles as fake or real.

Technical Skills

- **Programming Languages:** C, C++, C#, Verilog HDL, Python, SQL, HTML/CSS, JavaScript, \LaTeX , Django, Flask
- **Software and Libraries:** Git, Arduino IDE, Unity, DEVSIM TCAD, MATLAB, AutoCAD, ChatGPT, Inventor, Fusion360

Relevant Courses

Machine Learning Specialization (Stanford Online)	Harvard's CS50x 2023
Data Structures and Algorithms	NLP Specialization
Fundamentals of Computing	Spin Electronic Devices

Extra-Curricular Activities and Recognitions

- **Volunteer in National Service Scheme, IITK:** Mentors- *Prof. Niraj M. Chawake, Prof. Manoj K. Harbola, IIT Kanpur*. Worked in the field of education of socio-economically underprivileged children and youth.
- Represented IIT Kanpur in various debating tournaments including SBS'PD 2024 (Debating Society, IIT Kanpur)
- Represented Hall-12 in the Inter Hall Fresher's technical competition Takneek'23, IIT Kanpur in Game Development. (Aug'23)
- Won Best Delegate in e-MUN held at DPS, Prayagraj in 2020.
- Won Bilingual Turncoat held in DPS Udhampur's Unison consecutively in 2019 and 2020, delivered speeches in English & Sanskrit.