Aabir Sarkar
Course : **Electrical and Electronics Engineering**, 2026
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CGPA : 7.68

ACADEMIC DETAILS

COURSE	SPECIALISATION	INSTITUTE	BOARD	SCORE	YEAR
CLASS XII	SCIENCE	**B.K Birla Centre for Education, Pune**	**CBSE**	94.00%	2022
CLASS X	GENERAL	**B.K Birla Centre for Education, Pune**	**CBSE**	96.8%	2020

INTERNSHIPS AND PROFESSIONAL EXPERIENCE

Research Assistant, Reconfigurable Holographic Surface (RHS) Project
BITS Pilani, Department: Electrical and Electronic Engineering
September 2023 – Present

- Investigated the principles of Electromagnetic Information Theory (EIT) for RHS-based Communications, focusing on channel modelling to enhance the understanding of signal propagation in dynamic wireless environments.
  - Conducted an in-depth study of EIT principles, including the analysis of channel characteristics, signal propagation, and information transmission in the context of Reconfigurable Holographic Surface (RHS) technology.
  - Applied theoretical insights to contribute to the development of accurate channel models, providing a solid foundation for the subsequent stages of the project.
- Developed computationally efficient hybrid beamforming algorithms, integrating signal processing and machine learning techniques to optimize the sum rate and energy efficiency of multi-user RHS-based wireless networks.
  - Implemented and fine-tuned algorithms, showcasing proficiency in both algorithmic design and practical application.
- Evaluated the performance of RIS-RHS integrated networks in deep-blockage channel fading scenarios, leveraging the holographic nature of transceivers and the reflecting characteristics of reconfigurable intelligent surface (RIS).
  - Executed simulation studies and analysed results to provide insights into the practical implications of the RHS technology in challenging wireless communication environments.
- Set up a testbed for RHS-based wireless systems experimentation by fabricating an RHS surface and utilizing USRP hardware to validate the developed algorithms.
  - Applied hands-on expertise to design and build the experimental setup, ensuring accurate and reliable testing of the developed algorithms in real-world conditions.

POSITION OF RESPONSIBILITY

Crew Member, Google Developer Student Clubs **November 2023-Present**

- Actively participating in the planning and execution of events, workshops, and initiatives as part of the Google Developer Student Clubs.
  - Collaborating with fellow crew members to organize engaging activities and foster a vibrant developer community on campus.
- Contributing to the promotion and awareness of Google technologies and tools within the student community.
  - Facilitating discussions and knowledge-sharing sessions on topics related to software development, innovation, and technology trends.

Member, EEE ASSOCIATION @BITS Pilani **November 2023– Present**

SCHOLASTIC ACHIEVEMENTS/PROJECTS/PUBLICATIONS

Skills

- Programming Languages: C++, Python, C, HTML, CSS, JavaScript, PyTorch, TensorFlow, Keras
- Software Skills: Git, Docker, MySQL
- Scripting: Shell Scripting
- Other: MATLAB, Autodesk Fusion, SolidWorks, AutoCAD, LTSpice, ChatGPT