

SWETA KUMARI

Final Year Undergraduate at Department of CSE, IITK

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ACADEMIC QUALIFICATIONS

Year	Degree/Certificate	Institute	CPI/%
2020-Present	B.Tech (Computer Science and Engineering)	Indian Institute of Technology Kanpur	7.3/10
2020	Class XII - CBSE	St. Karen's High School, Patna	96%
2018	Class X - CBSE	Krishna Niketan, Patna	96.4%

INTERNSHIPS

Product Intern | Adobe, Bengaluru

(May'23-Jul'23)

Received **Pre-Placement Offer** for exceptional performance

Objective	Developed a responsive and interactive user interface using Python, React & Node JS Simplified the overall process that required significant engineer intervention and time
Approach	Worked with technologies like MySQL workbench, PostMan, Docker, GitHub, Jira etc. Collaborated with designers and developers to transform ideas into functional UI
Result	Eliminated the significant manual intervention in the process to zero using the self-service UI Significantly mitigated the process duration from nearly 1 week to 4/5 hours

KEY PROJECTS

Java Compiler Design | Prof. Swarnendu Biswas, CSE, IIT Kanpur 🌐

(Jan'23-Apr'23)

- Learned and built a fully functional **compiler** that converts **JAVA** programs to **x86-64 ISA** assembly programs
- Designed lexer, parser, semantic analyzer, and code generator using **Flex, Yacc**, and **C++** using **OOPs** concepts
- Incorporated support for a wide range of features, including classes, objects, methods, and recursion

Health Booklet Digitization | Prof. Indranil Saha, CSE, IIT Kanpur 🌐

(Jan'22-Apr'22)

- Successfully modeled the **digitized version** of the existing manual health booklet system of the institute
- Utilized **HTML, CSS** and **Bootstrap** for front end and **Python** and **Django** framework for back end
- Learned all aspects of software development i.e. specification, design, implementation, evolution, and validation

Calibration of sensors for pollutants | Prof. Purushottam Kar, CSE, IIT Kanpur 🌐

(Apr'23-May'23)

- Tested Kernels, KNNs, Deep Nets, SVR, and random forests to minimize errors in prediction of O_3 & NO_2 levels
- Applied loss functions and regularisers (**Ridge, Lasso, Elastic Net Regression**) for modeling
- Decreased the mean absolute error of the test set to **0.1** with a training time of **27** seconds using non-linear **SVR**

Modern Cryptology | Prof. Manindra Agrawal, CSE, IIT Kanpur 🌐

(Jan'23-Apr'23)

- Implemented code to break into systems secured by **DES** and **AES variant** using the chosen plain-text attack
- Learned about the secure hashing algorithms for digital signatures and implemented the reverse hashing algorithm
- Successfully decoded substitution, transposition, polygraphic, and permutation ciphers through adept solutions

Cracking Advanced XORRO PUFs | Prof. Purushottam Kar, CSE, IIT Kanpur 🌐

(Jan'23-Feb'23)

- Implemented ML techniques like **LinearSVC** and **Logistic Regression** to break advanced **XORRO PUF**
- Achieved test accuracy of **94.743%** and response time of **5.7** seconds utilizing LinearSVC for **64-bit** challenges
- Conducted experiments in **feature engineering** and **hyperparameter tuning**, enhancing overall performance

J.A.R.V.I.S Desktop Assistant | (Self Project) 🌐

(May'22-Jul'22)

- Developed a **Voice Activated Desktop Assistant** using Python and its libraries - **os, webbrowser, & pyttsx3**
- Designed an **UI** and integrated **voice recognition, natural language processing, and APIs** for task execution
- Executed actions like launching apps, playing music, accessing contacts, and sending emails

TECHNICAL SKILLS

Programming Skills: C, C++, Python, JavaScript, Haskell

Tools/Frameworks: Pysat, NumPy, Pandas, Matplotlib, React, Bootstrap, Axios, Git, Github

Other Utilities: L^AT_EX, Verilog, SQL, MATLAB, HTML, CSS, OpenCV

ACHIEVEMENTS AND EXTRACURRICULARS

- Secured a rank among the **top 0.02%** of candidates in the JEE Mains and JEE Advanced 2020
- Attained an **outstanding grade** in the **Theory of Computation** under guidance of Prof. Manindra Agarwal
- Rewarded by several newspapers and school for exceptional **academic performance** in Xth & XIIth boards
- Started the GDSC community on the campus acting as **Google Developer Student Club Lead**, IIT Kanpur
- Invited **internships** and courses for students acting as **Manager**, Academics and Career Council, IIT Kanpur