

# Aryaman Raj

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## EDUCATION

- **Rajiv Gandhi Institute of Petroleum Technology** Jais, UP  
(An Institution of National Importance along the lines of IITs)  
Bachelor of Technology in Computer Science and Engineering; CPI: 8.39\* Dec 2020 - Jun 2024
- **Central Board of Secondary Education**  
Intermediate, 2020: 92.5% & Matriculation, 2018: 93.6%

## PROJECTS

- **Blockchain in Healthcare** | *ETHIndia 2022* | Accepted in *IEEE* | 🐙 Sep 2021 - Dec 2022
  - Research work titled **Blockchain-based secure storage and management of electronic health records using a Smart Card** has been enlisted for presentation and publishing at IEEE's RAIT-2023 conference.
  - Built the prototype of a secure model for the time-stamped storage of EHRs with a devised and tested optimized searching algorithm. The Permissioned Blockchain and Lattice Cryptography solved the scalability and security issues. The system has been integrated with a smart card.
  - **Technology Stack:** SHA256, Blockchain, Nodejs, Public-Key Cryptography, Smart Card, Proof-of-Authority.
- **Digital media copyright infringement detection on the Web** | *WON SIH-2022* | 🐙 Jul 2022 - Aug 2022
  - Led a team of 6 to design and build a web scraper that identified and flagged websites infringing copyrights on parameters based on OCR of images of the web pages extracted using Puppeteer Library.
  - A Blockchain-based time-stamped record of permitted publishers is maintained.
  - **Technology Stack:** Solidity, IPFS, WEB3, Etherjs, Nodejs, PUPPETEER Library, Expressjs, PyTesseract for OCR.
- **BlockOasis - A Smart Water Management System using IoT & Blockchain with Cartesi** | *Finalist of UIA 2022 Hackathon* | Handled a team of 6 | 🐙 Jan 2023 - Present
  - IoT devices are used for real-time monitoring of the quantity and quality of water in the distribution infrastructure.
  - Data from IoT devices is stored on IPFS for analysis of water usage and wastage, flood and drought warnings, and water billing.
  - Blockchain Technology using Cartesi Machine and rollups aid in complex computation over the Big Data.
  - **Technology Stack:** Cartesi Rollups, Cartesi Machine, Solidity, IPFS with Filecoin on WEB3Storage, IoT sensors, Raspberry Pi.
- **Time Specific Encryption** | *Solution for FVM Spacewrap Hackathon 2023* | 🐙 Jan 2023
  - A Python Flask-based Time server that generates a Time Specific Key using a Binary Hash Tree.
  - Deployed AES Encryption using the parameters given by the Time Server.
  - **Technology Stack:** AES, SHA256, Flask, REST API, Pickle Library.

## PUBLISHED WORK

- **Blockchain-based Secure Storage and Management of Electronic Health Record using a Smart Card** | *IEEE conference* Sep 2022

## SKILLS

- **Languages:** C/C++, Python, JavaScript, Typescript, Bash, Solidity, HTML5, CSS3, MySQL
- **Libraries/Widgets:** WEB3Storage, Selenium, JSEncrypt, OpenSSL, Nodejs, Vercel, Nextjs, Hardhat, Relational Databases
- **Areas of Interest:** Soft Engineering, Blockchain Technology, SDLC, System Design, Data Structures and Algorithms, Linux, WEB3, IPFS, Cryptography, Ethereum Development, Freelancing, GraphQL, Pentesting
- **Tools:** Git/GitHub, Blender, Adobe Illustrator, Adobe After Effects, Adobe Photoshop, Adobe Premiere Pro, Adobe XD

## ACHIEVEMENTS

- **WINNER of the Smart India Hackathon 2022** | *Theme: Cyber-Security & Blockchain* | 🐙 Aug 22
  - The Problem statement was put up by the Ministry of Information and Broadcasting with 27 competing teams.
- **Finalist of UNESCO India-Africa Hackathon** | *Theme: Drinking Water and Sanitation* | 🐙 Nov 22
  - Project was on Mapping of Aquifer database, The Hackathon featured participants from 20+ African countries.
- **Shortlisted in EthIndia Hackathon** | *Theme: Blockchain in Healthcare* | 🐙 Dec 22
  - Organized by Ethereum India, it is World's biggest Ethereum Hackathon.
- **Shortlisted & Granted Scholarship in ETHDenver Hackathon 2023** Jan 23

## OTHER ACTIVITIES

- **OWASP RGIPT Student Chapter:** Founder & Lead | *Leading a team of 60*
- **T&P Committee, RGIPT:** Training and Placement Coordinator of Dept. of CSE
- **COSMOSx:** Organized the first three-day International Inter-Departmental Technical Fest themed COSMOSx organized by RGIPT ACM Student Chapter.
- **Gyanarpan, Project Amethi:** Teaching Volunteer & Organizing Head of Gyanarpan, Project Amethi that aims at teaching underprivileged students of Amethi district of UP. Leading a group of 150 teaching volunteers.
- **OWASP RGIPT:** Mentor and online teacher for Blockchain in Metaverse of Learning
- **Freelance:** Freelance video editing and Graphics Designing.