Ashit Rai

+91-9171891359 | ashitr@iitk.ac.in | ashitr | ashitr.github.io

Educational Qualifications

Year	Qualification	Institute	CPI/%
2016-2021	Mathematics and Scientific Computing (B.S.)	Indian Institute of Technology, Kanpur	5.6/10.0
2016	CBSE (XII)	Bansal Public School, Kota	84.2%
2014	CBSE (X)	St. Paul's Senior Secondary School, Katni	10/10

Scholastic Achievements

- All India Rank **563** OBC, JEE **Advanced**
- All India Rank **8943** OBC, JEE **Mains**
- Qualified for the 2nd stage of **International Maths Olympiad** held by SOF in 2012 and 2014

Distinguished Projects

From Nand to Tetris *Computer Architecture*
Online Project Jun'20 - Sep'20

- Developed a general-purpose computer starting from Gates to **ALU** & memory to **Assembler** using HDL
- Implemented a virtual machine and **Compiler** for Jack, a java like language, over the hardware platform
- Designed a basic **Operating System** to help execute the software built in Jack on the underlying hardware

Encrypted Dropbox *Computer Systems Security*
Prof. Pramod Subramanyan Mar'19 - Apr'19

- Created a cryptographically authenticated, encrypted, and secure file storage and sharing service in Go, given a malicious storage server and a trusted key server
- Designed a secure way to share a file or revoke access to it using **RSA**, **HMAC** and Digital Signatures

Web App Testing with Burp Suite *Web Security*
Online Project Aug'20

- Penetrated **DVWA** and OWASP **Mutillidae** using Burp Suite repeater and proxy to sniff and alter data
- Utilized dictionary attacks for login and exploited file upload and SQL injection vulnerabilities among others

Student Voting System *Blockchain and Applications*
Prof. Sandeep Shukla Feb'19 - Mar'19

- Spearheaded a team of 4 students to develop a decentralised voting system on **Ethereum** Blockchain
- Designed a Voter Identity Randomization algorithm to send votes incognito to a MySQL database

Understanding Deepfakes with Keras *ML*
Online Project Aug'20

- Built a **DCGAN** in Keras to generate artificial images similar to handwritten 0 from MNIST data-set

Mathematical Analysis *Numerical Analysis and Computing*
Prof, Akash Anand Feb'19 - Mar'19

- Designed an algorithm to find the shortest distance between a curve and reference point over 3D space

Real Time OCR and Text Detection *Machine Learning*
Online Project Sep'20

- Trained a Tensorflow **CNN** model to recognize relevant areas of text in any image, and generated text output using Google's OCR and pytesseract

Work Experience

Deskera Systems *WFH*
Software Developer Intern Apr'20 - Jun'20

- Developed an email fetching service in PHP and Golang to get all emails after login using **Gmail API**
- Implemented push notifications using **Watch()** request in Google Cloud **Pub/Sub** API via **Webhooks**
- Assisted in merging notifications to the CRM platform

WowExp Technologies* *Bangalore, India*
Augmented Reality Developer Nov'19 - Dec'19

- Developed an AR Portal using **Unity** shaders and a locally playable Foosball game using **Photon**
- Developed a furniture demo app using **ARCore** SDK to place 3D furniture models in real-time
- Built a cosmetic face tracking interaction in SparkAR

Transcendent Digitech Solutions* *Kanpur, India*
Augmented Reality Developer May'19 - Jul'19

- Developed an android app using Google **Sceneform API** to augment custom 3D models taken in real-time and used **Firebase** for database and authentication
- Led a group of 3 interns to make an app to assist students in visualising hard concepts using **ARCore**
- Developed a markerless Web AR POC using **Three.js**

*(*Received pre-placement offer)*

Relevant Courses

Algorithms
Data Structures and Algorithms

Systems
Operating Systems and Embedded Hardware* Computer Systems Security | Computer Architecture* Introduction to Networks * | Blockchain Technology

Theoretical Computer Science and Mathematics
Fundementals of Computing | Probability and Statistics Numerical Analysis | Abstract Algebra | Mathematical Modelling

Machine Learning
Introduction to Machine Learning *(*Online courses)*

Technical Skills

Programming Languages: C | C++ | Python | GoLang | C# | x86 | Solidity | HTML | CSS | PHP | SQL
Technologies: Unity | AR.js | Pub/Sub | FireBase
Database: mongoDB | MySQL
Utilities:GIT | MatLab | Wireshark | Burp Suite | LaTeX

Extracurricular Activities

- Secured 1st in Cubing competition, Takneek 2016
- Runner up in Fresher's Inferno 2016 Chess League