

ACADEMIC DETAILS

Examination	Institute	Year	CPI/%
Computer Science and Engineering	IIT Kanpur	2015-present	9.24
Class XII	Delhi Public School, Bhopal	2015	93.8
Class X	Delhi Public School, Bhopal	2013	10.0

Relevant Courses:

Discrete Mathematics | Abstract Algebra | Logic in Computer Science

Data Structures and Algorithms | Computer Organization | Machine Learning Theory* | Operating Systems*
(* : ongoing)

HONORS AND AWARDS

Fellowships	National Talent Search Examination (NTSE), 2013 KVPY scholar, 2014	Government of India Government of India
Awards	Academic Excellence Award , 2015-2016 All-India Rank 192 amongst 1.5 million students Scholarship (Complete fee-waiver) 2013	IIT Kanpur IIT-JEE, 2015 DPS Bhopal

FIELDS OF INTEREST

- Artificial Intelligence and Machine Learning
- Computer Vision : Scene Understanding, 3D modelling, Motion Capture
- Augmented reality and Mixed Reality

MAJOR PROJECTS

- **3D Reconstruction** (Research Project)
(Guide: Prof. Gaurav Sharma, IIT Kanpur, May'16 - April'17)
 - Objective : Understand the principles of reconstruction, epipolar geometry.
 - Coded **8 point** algorithm involving RANSAC and SIFT in Matlab and created a meshlab model from images.
 - Studied Multiple View Geometry by Hartley and Zisserman and Structure from motion research papers
 - **Single View Reconstruction**: Implemented deep learning model **3D Residual Recurrent CNN auto-encoder** for single object; **Scene reconstruction** using MRF and monocular cues applied on segmented super pixels.
- **AR Navigation** (Programming Club Project)
(Guide: Self, May'16 - June'16)
 - Created **Android** navigation app using Google Directions API and **unity3d game engine**.
 - Relayed unity graphics on camera feed according to accelerometer and gyroscope readings. GPS and magnetic compass was used to detect roads.
 - Awarded **best club project** | 📄: [varunkhare1234/augmented-reality-app](https://github.com/varunkhare1234/augmented-reality-app)
- **On Device Machine Learning** (New York Office, IIT Kanpur)
(Jan'17 - present)
 - Worked on **CoCoA** framework and Federated Machine Learning
 - Implementation on the app using tensorflow mobile
- **Android App Dev** (New York Office, IIT Kanpur)
(May'16 - present)
 - Implemented **SSE** notifications, Search functionality, code abstraction and **app-caching**

- Worked on REST APIs, material UI, Continuous integration with Jenkins, **data and property binding**
- Lead a team of 12 interns at NYO.
- **Cryptography** (Course Project *Discrete Mathematics*)
(Guide: Prof. Nitin Saxena, July'16 - Nov'16)
 - Implemented **Elgamal** algorithm giving a demonstration of encryption and decryption in python
 - Read about encryption systems and other algorithms involved **RSA, ELgamal, Rabin-Miller**
 - **Github:** github.com/varunkhare1234/elgamal
- **Other Projects**
 - Mentored **Depression Therapy Chat bot** as Programming Club project. Students implemented Sentiment Analysis using twitter data-set for user response classification. Classified in **Most innovative student activities** by IITK Newsletter.
 - Android application development for Antaragni 2016 | Mechanical Coin sorter as Technical Arts project.

TECHNICAL SKILLS

Languages	Proficient: C,C++, Java, Matlab/Octave, Bash, python, MySQL, \LaTeX Experienced: R, Verilog, Assembly, C#, HTML
Softwares	OS: ARCH linux, Ubuntu, Windows Softwares: Android Studio, Unity 3D, NetBeans, Git, vim, CI Jenkins

POSITION OF RESPONSIBILITY

Coordinator	<i>Programming Club, IIT Kanpur</i>	<i>(May'17-Present)</i>
Coordinator	<i>Google Developers Group</i>	<i>(May'16-April'17)</i>
Manager	<i>Software Corner, Techkriti 2017 (Annual Tech Fest)</i>	<i>(May'16-April'17)</i>
Student Guide	<i>Counselling service, IIT Kanpur</i>	<i>(June'16-April'17)</i>
Academic Mentor	<i>Counselling service, IIT Kanpur</i>	<i>(June'16-April'17)</i>
Senior Web Executive	<i>Antaragni 2016 (Annual Cult Fest)</i>	<i>(May'16-Nov'16)</i>
Senior Executive	<i>Entrepreneurship Cell, IIT Kanpur</i>	<i>(June'16-April'17)</i>