Varun Khare
Undergraduate Computer Science

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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*
Theory of Computation*   (* : ongoing)

HONORS AND AWARDS

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

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