Varun Khare

Undergraduate Computer Science

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ACADEMIC DETAILS

Examination	Institute	Year	CPI/%
Computer Science and Engineering	IIT Kanpur	2015-present	9.3
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

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 , May'16 - July'16)
  - Objective : Understand the principles of reconstruction, epipolar geometry.
  - Implemented **8 point** algorithm in Matlab and created 3D model from images
  - Studied Multiple View Geometry by Hartley and Zisserman, Structure from motion research papers
  - Extended Self project into Reconstruction from **single image** using monocular cues and **deep learning**

- **AR Navigation** (Programming Club Projec)
  (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 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)
  - Read and worked on **CoCoA** framework and Federated Learning papers by Google
  - Went through randomized coordinate descent, and other approaches tackled earlier.

- **Android App Dev** (New York Office, *IIT Kanpur*)
  (May'16 - present)
  - Implemented **SSE** notifications, Search functionality, code abstraction and **app-caching**
  - Worked on server client interaction, material UI, **data and property binding**
  - Presently leading 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

- **Machine Learning**

  - Worked with CNN's and RNN's for image classification and image captioning.

  - Mentored **Depression Therapy Chat bot** as Programming Club project. Students implemented Sentiment Analysis using twitter data-set for user response classification.

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

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

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 of IIT Kanpur)*	*(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 Executive	*Entrepreneurship Cell, IIT Kanpur*	*(June'16-April'17)*