

Ayush Gupta

SOPHOMORE · ROBOTICS ENTHUSIAST

Indian Institute Of Technology, Kanpur

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Education

Indian Institute of Technology Kanpur

BACHELOR OF TECHNOLOGY, MECHANICAL ENGINEERING

- Cumulative Grade Point: **9.2/10.0**

Kanpur, India

July 2017 - Present

Research Experience

Team AUV-IITK

FACULTY ADVISOR: PROF. MANGAL KOTHARI

- Implemented a novel preprocessing algorithm to formulate a computer vision pipeline for detecting objects
- Worked on web-based ROS GUI and data visualisation for gripping and manipulation tasks performed by vehicle
- First Runner Up at national level AUV competition, NIOT-SAVE 2019 with the newly manufactured Vehicle, Anahita (Design Paper: Arxiv)

Software Team Member

May 2018 - Present

Team Humanoid, IITK

ROBOTICS CLUB, IIT KANPUR

- Worked on a Bipedal Prototype of the humanoid bot, capable of performing statically stable walking
- Implemented the MATLAB simulated **inverse kinematics walking algorithm** based on ZMP criteria on the actual robot using ROS
- Developed a Web Graphical User Interface for debugging and monitoring using ROS Web Bridge Server and JavaScript

Software Team Member

Dec. 2017 - April 2018

Work Experience

New York Office, IIT Kanpur

SUPERVISOR: PROF. MANINDRA AGRAWAL

- Worked on Scala with Akka-HTTP for scalable and concurrent multi threading using functional programming
- Documented and compiled the entire collection of backend Application Programming Interfaces using PostMan
- Fixed bugs in the Scala backend, and collaborated using Phabricator, while developing an upcoming social platform

Backend Software Intern

May 2018 - July 2018

Skills

Web Development REST API, Express, Socket-IO, Bootstrap, HTML5, Mongo, Jekyll, Travis CI
Programming Node.js, C++, Java, Python, Scala, Unity, Git
Languages English, Hindi

Selected Projects

Chat-IITK

MENTOR: PROF. PUROSHOTTAM KAR

- Designed and developed a chat application on NodeJS, Express, Socket-IO, and MongoDB
- Implemented real-time chat using Socket-IO with PassportJS for extensively implemented **authentication** and **cookie handling**
- Database management** implemented using MongoDB, and application deployed on Heroku's server

Course Project - ESC101

Spring 2018

Microsoft Code Fun Do

HACKATHON PARTICIPANT

- The application generated summaries of the latest news based on the current trending hashtags on Twitter, using NLTK library and Azure
- Implemented the tweepy library which provided the hashtags as well as the tweets related to them
- Used Natural Language Processing to filter nouns and verbs, and rate words based on their frequency-inverse document frequency value

Academia Accelerator, Microsoft

March 2017

The Ball Game

3D GAME DESIGNED AND DEVELOPED ON UNITY

- Developed a basic platform game on the Game Development Framework Unity using JavaScript, and C# in the 9th grade
- Followed online tutorials and implemented collisions and links in the Unity Game Engine, while developing the game

Code on Github

January 2014

Honors & Achievements

2019	First Runner Up , Student Autonomous Underwater Vehicle Competition (SAVe), organised by National Institute Of Ocean Technology, Chennai	Chennai
2017	Top 0.7% in country , Joint Entrance Examination Advanced, 160,000 candidates	India
2017	Top 0.001% in country , Joint Entrance Examination Mains, 1.2 million candidates	India
2016	Top 1% in country , National Standard Examination in Physics	India
2015 & 16	Top 1% in country , National Standard Examination in Astronomy	India
2015	Awardee , Kishore Vaigyanik Protsahan Yojana Scholarship, Department of Science and Technology, India	India

Positions Of Responsibility

IITK Consulting Group

Students' Gymkhana

SECRETARY

July 2018 - April 2019

- Successfully prepared and delivered lecture to the campus community on introductory Machine Learning and Data Science
- Founding member of the Hobby Group, aiming to work on outsourced consulting projects, with emphasis on insights from collected data

Robotics Club, IIT Kanpur

Kanpur, India

SECRETARY

April 2018 - April 2019

- Volunteered in organizing introductory workshops for interested freshman students across the year
- Managed the club website, prepared content for lectures and helped organising competitions for campus community

Counselling Service, IIT Kanpur

Kanpur, India

ACADEMIC MENTOR AND STUDENT GUIDE

April 2018 - April 2019

- Assisted five freshmen students in adjusting to the college environment, providing guidance and emotional support
- Took campus level remedial classes for freshman year Mathematics, provided personal tutoring to academically weak students for their courses