

Yash Srivastav

SENIOR UNDERGRADUATE · COMPUTER SCIENCE AND ENGINEERING

Indian Institute of Technology, Kanpur

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EDUCATIONAL QUALIFICATIONS

Year	Degree	Institution(Board)	CGPA/%
July'17 – June'21 (expected)	B.Tech, ME	Indian Institute of Technology, Kanpur	9.2/10.0
2017	ISC – XII	City Montessori School, Lucknow (CISCE)	95.5%
2015	ICSE – X	St. Francis' College, Lucknow (CISCE)	95%

HONORS AND ACHIEVEMENTS

2017	Top 0.7% , JEE Advanced (amongst 160,000 candidates)	
2017	Top 0.001% , JEE Main (amongst 1.3 million candidates)	
2016	Top 1% , National Standard Examination in Physics	India
2015 & 16	Top 1% , National Standard Examination in Astronomy	India
2016	Top 1% , National Standard Examination in Chemistry	India

WORK EXPERIENCE

Intelligent Systems Lab

SUPERVISOR: MR. RAVI PRAKASH, DOCTORAL STUDENT

- Ported outdated available ROS code to operate on current development platform using ROS Kinetic on Ubuntu 14.04
- Actualized setup for simulation using Rviz and Gazebo for Universal Robots manipulator on a Guardian Robot
- Tweaked the hardware drivers and changed odometry publishers to fix position drift estimated by motor encoders
- Assisted in final objective to create collaborative autonomous robots capable of building walls, extinguishing fires in unknown environments

Robotics Intern

April 2019 - Present

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

Proficient	C, Golang, Python, Javascript
Experienced	C++, Java, Scala, Android
Exposure	Haskell, Rust, Dart, Perl
Frameworks	Express.js with Node.js, Akka with Scala, JavaScript, TypeScript, Angular, Redux, Flutter
Utilities	Linux shell utilities, Git, Docker, Ansible, Postgres, MongoDB, OpenCV, LaTeX, Vim, Emacs, vagrant

RELEVANT COURSES

Introduction to Programming(A*)	Discrete Mathematics	Computer Organization
Computer Architecture	Data Structures and Algorithms	Probability & Statistics(A*)
Computing Laboratories - 1(A*)	Computing Laboratories - 2(A*)	Compiler Design
Functional Programming(A*)	Computer Systems Security	Computer Networks(i)

A*: Grade for exceptional performance i: In progress

PROJECTS

Team AUV-IITK

Software Team Member

FACULTY ADVISOR: PROF. MANGAL KOTHARI

May 2018 - Present

- Fused sensor readings from Doppler Velocity Log (DVL) and IMU using an Extended Kalman Filter to generate odometry message for the vehicle
- Implemented a novel image preprocessing algorithm based on Fusion Framework to formulate a robust underwater computer vision pipeline
- Created multi-class dataset of labeled underwater photos, trained YOLO object detection model and setup real-time inference on Jetson TX2
- Developed and tested acoustic localization system capable of estimating the Direction of Arrival of ultrasonic underwater signals from pinger

Realtime Onboard Dense RGB-D Mapping on UAVs

MENTOR: PROF. MANGAL KOTHARI

May 2019 - Present

- Studied and experimented various techniques related to 3D mapping of environment using monocular and stereo cameras on Jetson TX2
- Evaluated approaches for shortcomings and computational requirements considering its onboard realtime implementation on UAV

Chat-IITK

Course Project - ESC101

MENTOR: PROF. PUROSHOTTAM KAR

Spring 2018

- 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**

Team Humanoid, IITK

Software Team Member

ROBOTICS CLUB, IIT KANPUR

Dec. 2017 - April 2018

- 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

Mechanical Quadruped

TA202

MENTOR: PROF. SHANTANU BHATTACHARYA

4th Semester

- Designed and simulated a four-legged assembly that uses Jansen's linkage mechanism to walk using Solidworks
- Made a working model of the same under constraints of size and materials using manufacturing processes such as lathing, milling and drilling

POSITIONS OF RESPONSIBILITY

- **Software Team Lead**, *Team AUV-IITK* :
Maintaining entire stack of an Autonomous Vehicle, deployed on Git, implemented using ROS, OpenCV and simulation integrated using Gazebo.
- **Secretary**, *Robotics Club, IIT Kanpur 2018-19*
- **Secretary**, *Consulting Hobby Group, IIT Kanpur 2018-19*
- **Student Guide**, *Counselling Service, 2018-19*
- **Academic Mentor**, *Counselling Service, 2018-19*

MISCELLANEOUS

- Runners Up in robotic soccer event Wild Soccer, and Visualise, in inter-hall competition
- Developed an application which generated summaries of the latest news based on the current trending hashtags on Twitter as code.fun.do submission
- Developed a basic platform game on the game development framework Unity3D using JavaScript and C#, updated on Github using nodejs and websockets as an Semester Project