Aman Agrawal

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Education

Degree/Exam	CGPA/%age	Institution	Year
B.Tech, Computer Science and Engineering	9.703/10	Indian Institute of Technology, Delhi	2019
Class XII, CBSE	97.8%	Ahlcon Public School, Delhi	2015
Class X, CBSE	10/10	SAJ Public School, Ghaziabad	2013

Scholastic Achievements

- **IIT Delhi Merit Scholarship** for being in the **top 7%** among 850 students in the 1st and 2nd semester.
- **All India Rank 24** in Joint Entrance Examination Main, 2015 among **1.4 million applicants**.
- **All India Rank 83** in Joint Entrance Examination Advanced, 2015 for admission to IITs.
- **All India Rank 279** in **Kishore Vaigyanik Protsahan Yojana (KVPY)** (Young Scientist Programme) 2014 conducted by **IISc Bangalore and Govt. of India**.
- **Top 1%** in the country in **National Standard Examination in Physics(NSEP),2015**.
- **Awarded Scholarship** for being in **top 1000** in **National Talent Search Examination (NTSE), 2013**.
- Was presented the prestigious **Principal's Cup**, bestowed to the best graduating student of **Ahlcon Public School** for outstanding academic and co-curricular abilities along with exemplary conduct.

Major Projects

Three Wheel Decoupled Holonomic Drive — Prof. Kolin Paul (CSE,IIT Delhi)
Summer Project 2016 — *April - August 2016*

- Developed three-wheel holonomic drive with decoupled motion using an ARM processor based micro-controller Beagle Bone Black.
- Utilized the PID closed loop control mechanism to achieve stability.
- Implemented line following using an array of OPT sensors.
- Programmed Serial, I2C and SPI communication between the Beagle Bone Black, IMU and Motor drivers.

RoboMuse 4.0 — Robotics Club, IIT Delhi
Robotics Project — *Jan-May 2016*

- Designed auto navigation through any indoor terrain for a robot.
- Introduced ultrasonic sensors, image and ranging sensors for real time feedback.
- Built android app and windows tool to manually control the robot and obtain real-time feedback.

Drainage Management Portal (DMP) — Prof. A.K. Gossain (IIT Delhi) and Delhi Government
Semester Long Project — *Dec 2015 - Current*

- Designed an android application that allows user to log and view complaints regarding the drainage system in Delhi and an Administrator Portal for the officials to view and take necessary action.
- Implemented Geographic Information System (GIS) to create a Google map of the different wards of Delhi.
- Backend API written in PHP, running on IIT Delhi Server that connects with the SQL Server.

Pixelate Robotics Club, IIT Delhi
Winter Project 2015 *Nov 15- Mar 2016*

- Implemented path planning algorithm on a robot using the Robot Control Toolbox.
- Used image processing in MATLAB to detect obstacles by shape and colour detection.
- Secured a rank in the top 10 out of about 100 teams participated in Techfest, IIT Bombay.

Other Projects

Stock Exchange Simulation System Prof. Amitabha Bagchi , August 2016

- Implemented an innovative "no-cost" stock exchange, which receives time-bound buy and sell orders and pockets a profit while matching them.
- Accomplished Multi-Threading with synchronized locks in Java to keep consistency in actions and to improve the efficiency.

Image Morphing Prof. P.R. Panda , March 2016

- Executed Image Morphing in C++ with the help of OpenCV using triangulation of feature points.
- Developed a generic code using Object Oriented Programming, and implemented the grow-able array data structure.
- All these intermediate images were encoded to form an AVI video.

Courses Undertaken

Completed:	Data Structures, Discrete Mathematical Structures, Probability and Stochastic Processes, Programming Languages, Computer Architecture, Digital Logic and System Design, Calculus, Linear Algebra and Differential Equations
Online Courses:	Machine Learning (by Stanford University) , Introduction to Computer Science (CS50 by Harvard University)

Computer Skills

Programming Languages:	C, C++, Python, Java, Html, Css, Vhdl, sql, Bash
Embedded Hardware:	Arduino, BeagleBone Black, Arm Processors
Softwares and Frameworks:	matlab, Android Studio, Web2py, Xilinx ISE Design Suite, Git

Extra-Curricular

- Developed an **Android Application named Spende** to connect the donors and the needy. Stood 1st in the Hackathon organized by **National Service Scheme,IIT Delhi**.
- Executive at **ACES-ACM**, the ACM student chapter of IIT Delhi and Coding Club.
- Team Member at **Robotics Club, IIT Delhi** from November 2015 to August 2016.
- Reached the Regional level of the **Asian Regional Space Settlement Development Competition (AR-SSDC)**, A contest that puts high school students in the shoes of aerospace industry engineers, designing a city in space that will be a home for over 10,000 people.
- **Head (Graphics) at Silico Battles**, The Annual Computer Fest of Ahlcon Public School.
- Member of **Debating, and Film Making club** of IIT Delhi.