

AYUSH PATEL

B.Tech, Computer Science and Engineering
Indian Institute of Technology, Delhi

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ACADEMIC DETAILS

Year	Degree	Institute	CGPA/Percentage
2016-2020	B.Tech in Computer Science and Engineering	Indian Institute of Technology Delhi	9.040/10.0
2016	Class XII, CBSE	O. P. Jindal School, Raigarh (C.G.)	97.8%
2014	Class X, CBSE	O. P. Jindal School, Raigarh (C.G.)	10/10

SCHOLASTIC ACHIEVEMENTS

- **Top 1%** in the country in **All India Senior School Certificate Examination (AISSCE)** Class XII Examination
- Secured **All India Rank 192** in JEE Mains and **All India Rank 575** in JEE Advanced among 2 million students
- Selected as **KVPY** Scholar under 'Kishore Vaigyanik Protsahan Yojana' organised by Indian Institute of Science
- Awarded **IIT Delhi Merit Scholarship** for being in the **top 7%** among 850 students in the 1st and 2nd semester
- **State Topper** in All India Senior School Certificate Examination (AISSCE) for Class XII, 2016 (Conducted by CBSE)

CORPORATE EXPERIENCE/ INTERNSHIPS

Tech Lead

Corporate Experience

Halanx Technologies Pvt. Ltd.

11 Jan 2020 - 8 May 2020

- Led the Technical team comprising of App Developers, Backend Developers, Frontend Developers and UI/UX Designers
- Developed Rental Housing Solution to reduce the operating cost of owners and provide affordable housing to the tenants
- Used various frameworks like Django, Angular, Android Studio etc. to provide an easy to use application to the customer

Cloud Network Platform Development

Summer Internship

Samsung Electronics (HQ), South Korea

May 2019 - July 2019

- Developed a Generic Toolkit for Profiling, Debugging, Automation and Monitoring Health of any Kubernetes Cluster
- Improved the available Samsung Cloud Platform (SCP) Toolkits for incorporating various CNIs (eg. OpenStack Kuryr)
- Developed Real-Time Log Parser, Analyzer and Summarizer for Root Cause Analysis of Errors and Cluster Breakdown

DashCam Car Accident Prediction

Summer Internship

ITRI, Hsinchu, Taiwan

May 2018 - July 2018

- Built Python module to crawl DashCam Videos from web and separate clips from these videos that contain car accidents
- Worked with OpenCV, scikit-learn, Darknet YOLO, selenium and various open-source image processing algorithms
- Used Python Tensorflow to train a model for predicting car accidents to be used in self-driving cars to avoid accidents

MAJOR PROJECTS

Automotive Security System

Prof. Smruti Ranjan Sarangi (CSE, IIT Delhi)

- Studied the architecture of Controller Area Network (CAN) bus and Plug-in Hybrid Electric Vehicle (PHEV) Technology
- Devising an improved architecture which tackles the existing security vulnerability without hampering the performance

Nokia ML Hackathon Platform

Prof. Niladri Chatterjee (Maths, IIT Delhi)

Worked with Hadoop, Docker, JupyterHub etc. to develop a platform for hosting large scale Data Science Hackathons

Capture The Flag WebApp

Prof. Ranjan Bose (CoE-CSIA, IIT Delhi)

Developed a CTF webapp on Django Framework with sqlite for hosting information security competitions on large scale

Tank Assault (DevClub IITD Project)

Developed a web based multiplayer game with Node.JS as Backend server and used sockets for real time connections

Protective Cover for Mobile Phones

Prof. Sudipto Mukharjee (ME, IIT Delhi)

Designed and Implemented embedded system of a phone cover whose corners expand on falling(used SMA and AtTiny)

COURSE PROJECTS

Baadal (IITD Computing Cloud)

Prof. Suresh Chand Gupta, September, 2020 - November, 2020

Implemented Load Balancing Module, On-Demand VM migration system and Resource Monitoring dashboard in Baadal

Extended Xv6 Operating System

Prof. Smruti Ranjan Sarangi, March, 2019 - May, 2019

Implemented various system calls, interrupt handlers, copy-on-write (COW) fork and deployed a fair scheduling algorithm

Multicycle ARM Processor

Prof. Anshul Kumar, March, 2018 - April, 2018

Developed a Multicycle processor for the ARM ISA in VHDL on FPGA, implementing AHB Lite Bus for connections

Prolog Interpreter

Prof. Sanjiva Prasad, March, 2018 - April, 2018

Implemented an interpreter for Prolog in OCaml using OCaml-lex for token generation and OCaml-yacc for parsing

Software Package for Engineering Drawing (ED)

Prof. Subhashis Banerjee, January, 2018 - February, 2018

Used OpenCV and Qt C++ to build a software package for performing ED operations on a given 3D model / 2D figures

Elevator Control System

Prof. Anshul Kumar, August 2017 - September 2017

Designed and Implemented an Elevator Control System to serve simultaneous requests on multiple lifts

Game-Bots using ML and AI

Prof. Mausam (October 2018), Prof. Parag Singla (March 2019)

Built Robots for numerous games (eg. Yinsh, Arkanoid) using Q-learning, CNN and various Deep Learning Models

COURSES UNDERTAKEN

• **Institute Courses:**

Data Structures, Discrete Mathematical Structures, Probability & Stochastic Processes, Programming Languages, Computer Architecture, Digital Logic & System Design, Calculus, Signals & Systems, Linear Algebra & Differential Equations, Computer Networks, Analysis & Design of Algorithms, Digital Image Analysis, Artificial Intelligence, Machine Learning, Parallel & Distributed Programing, Operating Systems, Linear Programming, Cloud Computing

• **Online Courses:**

Machine Learning (by Stanford University), Deep Learning (by Stanford University)

TECHNICAL SKILLS

• **Programming Languages:**

C, C++, Java, C#, Python, HTML, CSS, JavaScript, PHP, SQL, Bash, VHDL, LaTeX, Ocaml, Prolog, Scala, XML

• **Softwares and Frameworks:**

Docker, Kubernetes, OpenCV, Openstack, OpenMP, MPI, CUDA, Ansible, Django, NodeJS, Angular, React, Android Studio, React-Native, Cordova, Flutter, Eclipse, NetBeans, Git, Xilinx ISE, Unity, Vivado, MATLAB, Visual Studio, Apache Hadoop, Spark, PyTorch, Tensorflow, KVM, QEMU, Neutron, GAMS

EXTRA CURRICULAR ACTIVITIES

- **Executive Team Member and Developer** in **DevClub** (Developers' Club IITD) (January, 2017 - July, 2018)
- **Web Executive / Technical Representative** in **BSA IITD, AAIP IITD, SAC IITD** (April, 2017 - April, 2018)
- Took various Development Sessions as **Microsoft Student Partner India, 2017** (Delhi-NCR Region)
- **Overall Coordinator / Manager / Developer** of Nokia Data Science Hackathon IIT Delhi (April. 2018)

POSITION OF RESPONSIBILITIES

- **Technical Coordinator** in **Board for Recreational and Creative Activities, IITD** (April, 2018 - March, 2019)
- **Technical Secretary cum Coordinator** in **Board for Hostel Management, IITD** (April, 2017 - March, 2019)
- **Computer and Library Secretary** in **Satpura Hostel, IIT Delhi** (April, 2018 - March, 2019)
- **Technical Coordinator** in **Tryst (Technical Festival of IIT Delhi)** (May, 2018 - April, 2019)
- **Mess Secretary** in **Satpura Hostel, IIT Delhi** (April, 2019 - March, 2020)