

# Pavas Goyal

COMPUTER SCIENCE · INDIAN INSTITUTE OF TECHNOLOGY DELHI

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*"I spend my life building the world, I want to live in"*

## Education

### Indian Institute of Technology Delhi

B.TECH IN COMPUTER SCIENCE AND ENGINEERING

- Current CGPA - 9.42

*New Delhi, India*

*2018 - 2022*

### Rose Mary Convent School

CBSE ALL INDIA SENIOR SCHOOL CERTIFICATE EXAMINATION

- Percentage - 93%

*Punjab, India*

*2016 - 2018*

### Malwa School

ICSE INDIAN CERTIFICATE FOR SECONDARY SCHOOL EXAMINATION

- Percentage - 94.4%

*Punjab, India*

*2014 - 2016*

## Scholastic Achievements

- 2021 **Quadeye Excellence Scholarship:** Awarded by Quadeye Securities for outstanding academic achievements *Quadeye, India*
- 2021 **B-83 Merit Award:** Awarded by Alumini of 1983 batch for meritorious performance in academics at IIT Delhi *Alumini, IIT Delhi*
- 2019 **ACES-ACM Hackathon:** Winner of the DevClub ACES-ACM Hackathon organized at IIT Delhi *DevClub, IIT Delhi*
- 2019 **Research Scholar:** Invited by University of Sydney to attend as a Visiting Research Assistant at SCS Labs. *Sydney, Australia*
- 2018 **IIT Delhi Merit Award:** Awarded Merit Scholarship for being in the Top 7% performers among all Undergrads *IIT, Delhi*
- 2018 **JEE Advanced, All India Rank 90:** Secured AIR 90 in JEE Adv. among 1.2 million participating candidates *IIT, Kanpur*
- 2017 **KVPY, All India Rank 337:** Received Kishore Vaigyanik Protsahan Yojana Fellowship Award by Govt. Of India *IISc, Bangalore*

## Work Experience

### Microsoft Corp.

SOFTWARE ENGINEER INTERN

- Built a browser extension using React-Ts featuring a task management system to help users enhance their personal productivity and efficiency.
- Developed various productivity methodologies like Kanban Board, Eisenhower Matrix, Time Boxing, 135 grouping, Task Categorization.
- Built a Unit and Integration testing framework using Jest for improving reusability of code.
- Added Telemetry analysis to the application for monitoring performance, using application insights provided by Microsoft Azure.

*Hyderabad, India*

*May. 2021 - July. 2021*

### Nokia Corp.

SOFTWARE ENGINEER INTERN

- Built text dependent speaker recognition and fingerprint recognition module for adding authentication to office robot
- Utilized Gaussian Mixture Models for speaker recognition facilitating spectral noise gating for noise abstraction.
- Used image processing techniques like Gabor filter, normalization and thinning for latent fingerprint enhancement.
- Integrated voice command facility for guiding Robotic Navigation System. Rendered the graphics using Qt library.

*Gurugram, India*

*April. 2020 - June. 2020*

### FlexiEle Pvt. Ltd.

NATURAL LANGUAGE PROCESSING ENGINEER INTERN

- Utilized Spacy, Microsoft recognizers, nltk, Regex for robust resume parsing and keywords based classifier for resume segregation.
- Used attribute based scoring, facilitated by semantic matching using Universal Sentence Encoder, for ranking based on given job description.
- Designed a conversational Interviewing System for evaluating knowledge as well as quantifying confidence of the candidate.

*Gurugram, India*

*June. 2020 - July. 2020*

### Acadmaze

LEAD TECHNICAL DEVELOPER

- Designed a web platform to increase the visibility of academic research and improve its collaboration with R&D unit of industries.
- Implemented the server side system using expressJS and NodeJS for handling client requests and mongoDB for handling server side storage.
- Devised an efficient query system for advanced and power rich text search using nodeJS \$search

*New Delhi, India*

*Jan. 2019 - Jan. 2020*

# Major Projects

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## Raster Table Image Accessibility

*Prof. M. Balakrishnan, IIT Delhi*

PROJECT SPECIALIST ASSISTECH LAB, IIT DELHI

*May. 2019 - July. 2019*

- Developed a software to facilitate accessibility of tabular data in digitized books and research texts for blind people.
- Achieved >90% accuracy in structure extraction using contour detection methods and >85% accuracy in text extraction using OCR.
- The project was done as a part of Reading Assistant for Visually Impaired being developed by Assisotech Lab, IIT Delhi

## Multi Router Traffic Grapher Alarm System

*Prof. Niladri Chatterjee, IIT Delhi*

RESEARCH PROJECT, NOKIA

*Sept. 2020 - Dec. 2020*

- Designed analysis tool for MRTG, which assessed health of network devices and raised alarm at abnormal events.
- Implemented a scripting algorithm to extract graph data points achieving 98% accuracy for anomaly detection.
- Minimized the incident to alarm latency by employing parallelized processing and caching for redundant OCR calls.

## Ultra Low Latency Multi-Platform Controller

*DevClub, IIT Delhi*

DEVELOPER, DEVCLUB, IIT DELHI

*March. 2020 - April. 2020*

- Developed an application that turns a smartphone into a controller for any emulator that supports custom buttons.
- Built server-client architecture using combination of TCP and UDP sockets achieving ultra low latency of 10 ms.
- Utilized py-automation for generating server side OS signals to increase the platform scalability of the controller.

## User Process Scheduling and Management

*Prof. Kolin Paul, IIT Delhi*

SEMESTER PROJECT

*March. 2021 - April. 2021*

- Devised design of data structures and implementation of syscalls for user process management on PintOS, an educational OS.
- Implemented priority-based scheduling of user threads. Dealt with priority inversion using priority donation mechanism.

## Covid Query System

*Prof. Maya Ramnath, IIT Delhi*

SEMESTER PROJECT

*April. 2021- May. 2021*

- Designed a memory efficient schema and developed an effective querying system in PostgreSQL over KCDC Covid Dataset.
- Implemented indexes and materialized views for minimizing latency and triggers, rules and transactions for DB Management.
- Designed a collective Web-UI using Bootstrap achieving the compression of 100+ queries to 5 user interactive forms.

# Technical Skills

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**Languages** C, C++, Python, Java, PostgreSQL, Dart, Ocaml, VHDL, Verilog, Prolog, HTML, CSS, Javascript, Typescript, MIPS, LaTeX  
**Software & Tools** Spacy, OpenCV, OpenMP, MPI, Numpy/Pandas, Tensorflow, PyTorch, Linux, Git, Flutter, AndroidStudio, Azure, AWS

# Relevant Courses

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**CSE** Programming Languages, Algorithm Design, Parallel and Distributed Programming, Computer Networks, Computer Architecture, Operating Systems, Database Management, Discrete Maths, Data Structure and Algorithm, Digital Logic, System Design  
**ML** Machine Learning, Principles of Artificial Intelligence, Linear Algebra, Deep Learning, Probability Theory and Stochastic Processes  
**Extra** Special Module in Cyber Security, Ethics in Computer Science, Linguistics and Language, New Venture Creation, Organisation and People Management, Engineering Visualization, Signals and Systems

# Extracurricular Activity

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## DevClub, IIT Delhi

EXECUTIVE AT DEVCLUB

- Developing novel applications catering to problems both inside and outside the institute.

## Competitive Programming

ACTIVE COMPETITIVE PROGRAMMER

- Active competitive coder with highest 1935 rating at global level on codechef platform.
- Globak rank 432 in Kick Start 2021 Round F
- Globak rank 434 in Kick Start 2021 Round G

## Acadmaze, IIT Delhi Startup

TECHNICAL HEAD

- Worked as a Core Team Member and Lead Developer at Acadmaze for over an year.
- The startup was selected as a regionalist at Entrepreneurship World Cup and iB Hubs start-up school.