PARAM KHAKHAR

ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech in Computer Science & Engineering	Indian Institute of Technology, Delhi	9.246
2018	CBSE	Aklank Public School	92.6%
2016	CBSE	Shree Vallabhacharya International School	10.0/10.0

SCHOLASTIC ACHIEVEMENTS

- Secured a perfect **10 SGPA** in the second semester 2018-19.
- Awarded a **Certificate of Merit** for being in **Institute Top 7%** amongst 900 students in semester II.
- **All India Rank 83** in Joint Entrance Exam-Advanced -2018 among 231,000 candidates
- **All India Rank 132** in Joint Entrance Exam-Mains -2018 among 1.15 million candidates
- Qualified **National Standard Examination in Chemistry(NSEC) 2018** being among the **Top 1%** of the country.

INTERNSHIPS

- **JBM Group, Remote (July 2020 - August 2020)**: *Anomaly Detection for Automobile Parts*
  - Trained a **CNN-Autoencoder** on augmented non-defective images of automobile parts.
  - Classified defective automobile parts from non-defective parts on the basis of reconstruction loss.
  - Experimented with image enhancement techniques, different losses, and regularization.
  - Achieved a **recall** of **70%** and a **precision** of **67%** for the defective parts.

PROJECTS

- **Battery Capacity Prediction**: *Prof. Rahul Kumar Dubey*, Jun' 20 - Jul' 20
  - Used *NASA's Li-Ion Battery Dataset* and extracted features for the prediction of *Battery Capacity*.
  - Developed a generalized *Battery Health Prognosis* model using several *Regression Algorithms*.
  - Used different validation schemes and added Gaussian Noise for more robust and generalized results.
  - A research paper describing the procedure is submitted for a reviewal at *Springer* and *Elsevier*.
- **Predicting Future Item Sales**: *Kaggle Competition (Completed),* May' 20 - Jun' 20
  - Performed Exploratory Data Analysis on the time series data followed by processing outliers.
  - Devised new features based on the time window frame, item-categories, and locations of shops.
  - Trained an *XGBoost* classifier for making predictions along with tuning hyper-parameters.
- **MIPS Processor Simulator**: *Prof. Preeti Ranjan Panda*, Mar' 20 - Apr' 20
  - Implemented and compared the *Multicycle* and *Pipelined* version of the processor for MIPS architecture in C++.
  - Detected branch and control hazards, and resolved Hazards using techniques such as *Forwarding* and *Stalling*.
  - Modeled the variable delays in the data memory by *Probabilistic Execution* of the read operation from the memory.
- **Lambda Spreadsheet**: *Prof. Sanjiva Prasad*, Feb' 20 - Mar' 20
  - Specified the tokens and implemented *Lexical Analyser* using *Ocamllex* for tokenizing the input.
  - Designed the grammar for the *Parser* and implemented it using *Ocamlyacc* for the tokenized input.
  - Implemented the backed in *Ocaml* for carrying out various row-column operations on the spreadsheet.
- **Displaying Text in Air**: *Prof. Anshul Kumar*, Oct' 19 - Nov' 19
  - Different LEDs of an LED array light up corresponding to the characters of the entered text.
  - Designed and implemented UART and a Finite State Machine for the design in VHDL on Vivado.
  - Tested the VHDL code and demonstrated the system on an LED array using BASYS-3 XILINX FPGA board.
- **Efficient Project Management System**: *Prof. Subodh Kumar*, Sept' 19 - Oct' 19
  - Implemented a *Project Scheduler* in Java which simulated project execution based on their priority.
  - A *Priority Queue* was implemented to store the projects for efficient insertion and retrieval.
  - *Red Black Tree* and *Trie* were implemented for the efficient storage of other project attributes.

TECHNICAL SKILLS

- **Languages:** Python, C, C++, Java, Ocaml, Prolog, VHDL, SQL
- **Libraries**: Pandas, Numpy, Scikit-Learn, Keras, Matplotlib
- **Others**: Git-Github, HTML, CSS

EXTRA CURRICULAR ACTIVITIES

- Campus Ambassador for Univ.AI, responsible for communicating and organizing events,sessions etc.
- Involved in collection drive and Know Your Rights initiative as a Student Volunteer for NSS, IIT Delhi.
- Part of the Hostel Badminton Team for the Inter Hostel Sports Tournament.

Disclaimer: All the information on this page is entered by student.

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IIT COURSE

Degree	Institute	CGPA
B.Tech in Computer Science & Engineering	Indian Institute of Technology, Delhi	9.246

COURSES DONE

Linear Algebra & Diffe. Equa., Intro. To Electrical Engg., Calculus, Electromagnetic Waves&qua.mec., Data Structures And Algorithms, Discrete Mathematical Structur, Digital Logic & System Design, Introduction To Comp.sc. & Eng, Probability & Stochastic Pro., Principles Of Elect. Materials

POSITIONS OF RESPONSIBILITY

- Executive, ACES ACM (May, 2019 - April, 2020)
- EventsExecutive, PORs 20-21 (August, 2020 - Present)