PRATYUSH PANDEY

Senior UG, Electrical Engineering & Computer Science, yashpandey4@gmail.com ✉ | pratyush.ee117@ee.iitd.ac.in ✉
Indian Institute of Technology (IIT) Delhi (+91) 9820807802 ☉ | Github ⬡ | LinkedIn in

ACADEMIC QUALIFICATIONS

Year	Degree	Institution	CGPA/Percentage
2017-2021 (Current)	B.Tech. in Electrical Engineering Minor Degree in Computer Science	**Indian Institute of Technology (IIT) Delhi**	9.05/10.0
2017	Class XII, HSC	RW Junior College, Mulund	90.60%
2015	Class X, ICSE	Smt. Sulochanadevi Singhania School, Thane	98.29%

SCHOLASTIC ACHIEVEMENTS

- **Teaching Assistant:** for graduate level *Database Management Systems* course for Fall 2020 semester, member of the teaching staff
- **Publication:** Authored *MergeConnects: Generalized regularisation of Deep Neural Networks* with Prof Ernest Chong (AAAI 2020)
- **Cargill Global Scholar:** 1 in 60 global awardees selected for leadership training in business practices and mentorship for 2 years
- **IIT Delhi Semester Merit Award:** Institute Scholarship for securing a perfect 10 GPA, and finishing in the top 7% of the class
- **Department Change:** 1 in 6 students in batch who switched majors to Electrical Engineering based on CGPA and extra-curriculars
- **Siemens Scholarship 2015:** Awarded for academic excellence and securing a place among top 10 ICSE scorers across the country

INTERNSHIPS

Microsoft Corporation (IDC), India Word Online Team, Office-365
Software Engineering Intern: Adaptive Intelligent Ribbon for Office Online *May, 2020 - July, 2020*
- Designed & Developed an intelligent, customizable ribbon tab in Word Online for predicting future commands based on user history
- Worked on end to end feature integration with FE (using **React** and **Redux**) and BE (using **C#**), deployed **Keras** based ML model
- Developed context detector using NodeType to increase prediction relevance; Reduced latency by dynamic loading of model on Azure
  *Received **Pre-Placement Offer (PPO)** for impeccable performance during internship; the project was fast-tracked to production*

Bending Spoons, Milano, Italy Support Tools Team
Data Science + SDE Intern: App Store Optimisation and Internal Support Tools *November, 2019 - January, 2020*
- Worked with Google BigQuery & Cloud Platform to update app metadata to prioritise in search results (across locales) on App Store
- Created a **MongoDB, Celery & Flask** based RESTful web application to automate metadata updation; Integrated tool with Slack

Singapore University of Technology and Design (SUTD) Prof. Ernest Chong, ISTD
Deep Learning Researcher: Regularisation Strategies for Deep Neural Networks *May, 2019 - July, 2019*
- Conceptualised Mergeconnect regularisation, offering enhanced generalisation over unseen data by **2.1%** over dropouts/dropconnects
- Outperformed dropout on state of art **ResNet32, wide ResNet & ResNeXT** using benchmarking dataset SVHN & CIFAR100
- Tested method on ResNeXt with skip-connection, data-augmentation & Nesterov Momentum to achieve 96.4% accuracy on SVHN

Covered By Sage Inc, USA Product Team
Software Engineering Intern: Certificate of Insurance Tracker (CoI) product *July, 2020 - Present*
- Helped ideate the system design and requirements; Employed **Microservices** and **SOLID** architecture using **Springboot & Java**
- Used **Docker** and **Kubernetes** for containerization and deployment; Used **Kafka** with **Azure OCR** for tracking COI Compliance
- Used **React & TypeScript** and schema services for FE; **MongoDB** for database, **AWS S3, Textract** for OCR, CDN and storage
  Delivered MVP within 2 months to get first mover's advantage over domain competitor Thimble, leading to growth of Sage's business

MAJOR PROJECTS

Thesis: Tracking State Changes for Entities in Procedural WikiHow Text Dr Maya Ramanath & Dr Srikantha Bedathur
Bachelor's Thesis Project: In collaboration with IBM AI Horizons Network *July, 2020 - Present*
- Created a dataset using WikiHow pages on computers & electronic categories; created knowledge graph models to model state changes
- Deployed an NLP scheme to predict the actions taken and changes in properties of the entities involved in the process at each step

Optimal Strategy for Cannon playing AI Bot Dr. Mausam
AI Project: Developed an intelligent bot for optimising the game winning strategy in Cannon *July, 2019 - December, 2019*
- Modelled Cannon, a 2-Player strategy game as a search space with utility of future moves as weighted function of 11 in-game features
- Decided future moves using **IDDFS Search** upto depth 8 with minimax, α-β pruning, transposition table, tabu list and **TD learning**

PageRank Algorithm using MapReduce Paradigm Dr Rijurekha Sen, *Jan, 2020 - March, 2020*
- Implemented the MapReduce Library in C++using Message Passing Interface **(MPI)** for parallelised, efficient Pagerank computation
- Benchmarked performance with Google's original algorithm using Barabasi and Erdos graph networks to optimise runtime by 47%

PKI using RSA and Vignere Ciphers Dr AK Bhateja, DRDO, *Feb, 2020 - April, 2020*
- Implemented an end to end Public Key Infrastructure (PKI) system, using a mixed encryption scheme of RSA and Vignere Cipher
- Implemented CRT for efficient encryption and decryption; Used only strong-primes for RSA key-pair generation with gmpy2 library

TECHNICAL SKILLS

- **Languages:** Java, Python, C++, Javascript, Typescript, C#, C, Go, OCaml, SQL **ML Frameworks:** TensorFlow, PyTorch, Keras
- **Libraries:** ReactJS, NodeJS, Redux, SpringBoot, PostgreSQL, MongoDB, Kafka, GraphQL, Docker, Django, Flask, AWS, OpenMP

EXTRA CURRICULAR ACTIVITIES

Chief Editor | Board for Student Publications, IITD *April, 2019 - August, 2020*
Heading IITD's Journalistic and Media body; Tenure extended by 3 months due to COVID
- Led a team of **30+** Journalists to cover various campus issues; Increased online outreach by **500%** and launched 8 new creative series
- **Coordinator, Publicity, Literati '19**: IITD's Literary festival; Led 5 print publications and kept students updated during lockdown

Social Work | Education *April, 2018 - Present*
- Mentors Without Borders: Remotely Mentored 20 students from Ghana via FundLife Intl on Java coding with best industry practices
- Codeucate: Remotely Mentored 10 high school students on Advanced Python; designed and set the curriculum for a new SQL course
- Kilkari, NSS IITD: Taught underprivileged middle school students from India PCM, Languages and Coding during COVID-19 period

Representative | Debating Club, IITD *April, 2018 - April, 2019*
- International level: Breaking Adjudicator, SMU Hammers '19 (Singapore) MIDP Malaysia Pre-Asians '19 (Kuala Lumpur), IITPD'19