

Paawan Gupta

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Education

IIIT Hyderabad

B.TECH. IN COMPUTER SCIENCE AND ENGINEERING **CGPA : 9.39/10**

Hyderabad, India

August 2015 - PRESENT

Maheshwari Public School

- CLASS XII - **PERCENT - 96.00%**
- CLASS X - **CGPA - 10/10**

Jaipur, India

2012-2015

Work Experience

Rubrik

Bangalore, India

SOFTWARE INTERNSHIP

May 2018 - August 2018

- Developed a tool in **Python and C++** which exposes **APIs** for automatically generating and verifying data in block level on various Virtual Machine Disks. Performance improvement of **200-300%**. **Thread pooling** is used to increase CPU utilization. An open-source tool is integrated with the framework.
- Generated a load **100 GB of data** on a single VM(remote VM in USA) in **40min** from India. User can specify asynchronous/synchronous reading-writing loads on VMs. User can also specify the distribution of files(like depth of directory, number of files per directory), size of block, type of verification, churning parameters.
- Developed a **full-stack framework in Django on Docker** to show performance based metrics of every employee. Dashboards are implemented in **AngularJS** which shows graphs based on metrics. **Celery** is used to schedule tasks for scrapping data and handling queries of users. **Redis** is used as message broker between Celery and Django. Designed database with **B-tree indexing** on multiple fields.
- Handled about **100+ daily code submissions** with about 10-20 activities recorded per day for each user.

Doctl

Hyderabad, India

SOFTWARE INTERNSHIP

August 2016 - Nov 2016

- Worked in a team to develop a **full stack framework in Django** which helps doctor and nurses to take weekly actions on high risk pregnant women living in rural areas.
- Dashboards for each team were implemented in **AngularJS and HTML**. Scrapping of data from an online website was done using **beautifulsoup** and were scheduled periodically using **Celery**.

IIIT Hyderabad

Hyderabad, India

TEACHING ASSISTANT

August 2017 - Current

Roles like taking tutorials, assignments formation and evaluation, quizzes, evaluating exam scripts.

Robotics Lab, IIIT Hyderabad

Hyderabad, India

UNDERGRADUATE RESEARCHER

May 2017 - Current

- **Person following autonomous Cart** - Developing an autonomous cart which follows a worker in a factory or a warehouse.
- Using **RANSAC, Opencv tracker, Kalman filtering, Kinect sensor, NITE with online learning** to achieve an interface which can robustly track humans. Currently working on removing some drawbacks from the algorithm designed.
- Some **hand gestures** are supported for stopping and starting cart, autonomously find path to specified area like storage area.
- **Product Recognition and Planogram Compliance in retail shelf** - Currently working on developing a mechanism to detect the number of products present in a shelf. **Supervised learning** is done on images from different stores and product to identify the product.

Projects

Wikipedia Search Engine

Python

UNDER DR. VASUDEV VERMA

2018-2018

- A search engine capable of querying static Wikipedia pages (about 60 GB data dump) within 1 sec.
- Implemented the framework using **Stemming, tokenization, parsing tools, pattern matching, k-way merge sort** and other tools.

Compiler and Interpreter for Flat-B Language

Yacc, Bison, LLVM, C++

UNDER DR. SURESH PURINI

2017-2017

- Developed a fully functional compiler for Flat-B language(similar to C). Designed a **Parser, Abstract Syntax Tree generator, Front-end IR generator and Mapper**. Mapper maps the IR generated to LLVM back-end.
- Compiler can handle loops, reading/writing to console, selection statements and function calls.

AI bot for a 4x4 Ultimate Tic Tac Toe

Python

UNDER DR. PRAVEEN PARUCHURI

2017-2017

- Developed an **AI Game bot** for a game similar to 3x3 Ultimate Tic-Tac-Toe.
- Used **Alpha-beta pruning** in minimax algorithm along with a **good heuristics** for finding best pruned node.

Multi-Class Text Classification and Topic Modelling

Python, Sklearn

UNDER DR. VINEET GANDHI

2017-2017

- Categorized the BBC News corpora into different topics using **Latent Dirichlet Allocation** which is an unsupervised probabilistic model.
- **Hidden Markov models** were analyzed to build LDA model.

MultiClient Chat system

JAVA, Sockets

DISTRIBUTED SYSTEMS

2018-2018

- Build a multi-user chat system in **JAVA** where users can chat with members in a chat-room. Users can send files to members of a chat-room or privately via **UDP or TCP**.
- The user can list online users, chat-rooms available, create new chat-rooms, invite other users to chat-room, send personal message.

Bloxorz

C++, OpenGL

UNDER DR. AVINASH SHARMA

2017-2017

- Build a 3D game based on the original bloxorz by Miniclip. User has to slide and rotate a cuboid shaped object into a small hole. User can go up to 10 levels with increasing difficulty and has to expect new rules after some levels.

Bash Terminal

C++

OPERATING SYSTEMS

2016-2016

- Developed a bash shell which supports Linux functions like creating/killing of processes, basic shell functions.
- Build on concepts like **threading, exec, fork, signals**.

Mini SQL Engine

Python

DATABASE SYSTEMS

2018-2018

- Developed a mini SQL engine which can execute basic SQL queries along with aggregate queries.

Achievements

- **ACM-ICPC** Got **India rank 29** in Online Round (**out of 3200**, Team - Dunedain)
- **ACM-ICPC** Got **Institute rank 1** in Online Round (**out of 85 teams in college**, Team - Dunedain)
- Secured **Global Rank 72 and 80** in **Codechef Contests** (Given by more than 7000 worldwide)
- Dean **Academic Merit List** (top 5% of batch) in all semesters
- Secured **All India Rank 690** in JEE Mains(given by around 1.5 Million)
- Secured **All India Rank 5014** in JEE Advanced (given by 0.2 Million)
- **Awarded NTSE** Scholarship (National Talent Search Examination) by NCERT (**Indian Government** Educational Body)
- **Awarded KVPY** Fellowship by **IISC Bangalore**
- Cleared **NSEC** (National Standard Examination in Chemistry) exam and went to its 2nd Level exam **INCHO** (Indian National Chemistry Olympiad) (Also in **Top 10% national merit**)
- Secured **highest scores** all over India in **Chemistry and Computer Science** in XII exams
- **Codechef** Best Rating **1988**
- **Hackerrank** Current Rating - **2100** (In top 5% worldwide); Many times in **Global Top 200** in Coding Competitions

Relevant Courses Done

- Computer Science - **Operating Systems, Distributed Systems, Databases, Computer Networks, Data Structures, Artificial Intelligence, Algorithms, Software Engineering, Compilers, Basics in ML**
- Electronics - **Digital Logic and Processors**, Basic Electronic Circuits, Digital Image Processing
- Mathematics - Discrete Mathematics, **Linear Algebra**, Differential Equations, Complex Analysis, **Probability Theory**

Skills

- **C++, C, Python, Java**, HTML, Bash, **Shell**, \LaTeX , Matlab, MIPS Assembly Language, OpenGL, MySQL, PostgreSQL
- **Django**, Flask, Windows, **Linux**, **OOPS**, **GIT**, **Scikit learn**