

UTKARSH YASHVARDHAN

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Education

Birla Institute of Technology and Science, Pilani

M.Sc. in Mathematics + B.E. in Computer Science (Dual Degree) | CGPA: 8.15/10

Pilani, Rajasthan

Aug. 2019 – Present

Lucknow Public College, Sahara States, Jankipuram

HSC | Percentage: 92.75%

Lucknow, U.P.

Apr. 2016 – May. 2018

Coursework

- | | | | |
|------------------------------|---------------------------|----------------------------|--------------------------|
| • Advanced Calculus | • Optimization* | • Differential Geometry | • Algorithms |
| • Linear Algebra | • Nonlinear Optimization* | • Introduction to Topology | • Design and Analysis of |
| • Probability and Statistics | • Discrete Mathematical | • Measure and Integration | Algorithms |
| • Real Analysis | Structures | • Ordinary Differential | • Object Oriented |
| • Numerical Analysis | • Combinatorial | Equations | Programming |
| • Discrete Mathematics | Mathematics | • Partial Differential | • Database Systems |
| • Group and Field Theory | • Mathematical Methods | Equations | • Coursera DL |
| • Graph Theory | • Operations Research | • Introduction to | Specialization |
| • Number Theory | • Fuzzy Logic and | Functional Analysis | • Coursera ML |
| • Optimization | Applications | • Data Structures and | Specialization |
| • Combinatorial | | | |

Note: '*' denotes class rank 1

Experience

Research Assistant

BITS IOT Lab

May. 2023 – Present

BITS Pilani

- Working on applications of Generative Artificial Intelligence in security domain

Software Engineer Intern

L&T Infotech

Jun. 2021 – Jul. 2021

Mumbai, Maharashtra

- L&T Infotech – a **global technology consulting and digital solutions company** with operations in **33 countries**.
- I worked with a team of **dedicated IIOT Engineers** on the development of an **asset management system**.
- **Developed 3 microservices** for the asset management system.
- *Key Learnings*
 - * Learned to **implement** and work with **microservices architecture**.
 - * Learned to work with the latest technologies like **Node.js, Express.js, PostgreSQL, Sequelize.js, Swagger, TimescaleDb** etc.
 - * Learned to **work** with professionals in a **fast-paced environment**.

Projects

Compiler Implementation | Compiler Construction, C Programming

Jan. 2023 - Apr. 2023

- *Project Description*
 - * The project involves designing and developing a Compiler for a custom language using C.
 - * Design and implementation of the **lexical analyzer** and **parser** for the given custom language are done.
 - * The project also implements **lexical and parsing error detection** and **parse tree creation** for the given custom language.
- *Role in the 5-member team*
 - * Implemented efficient data structures like **Hash Table, Stack, N-ary Tree**, and **Set**, which were crucial for compiler implementation.
 - * Contributed to **designing DFA for the lexical analyzer** phase of the compiler design. Also contributed to lexical analyzer development.
 - * Contributed to **designing context-free grammar for the parser** phase of the compiler design and developed crucial parser functions.
- *End Result*
 - * Learned about the **internal functioning of the Compiler**.
 - * Got experience in implementing a **complex system like a Compiler** using just basic **C constructs**.
 - * Learned how to **cooperate together** as a team while **working on a big project**.

- *Project Description*
 - * The project implements a basic **system to manage cab booking** from **both customer's and driver's ends**.
 - * It also shows the **complete journey of the customer from the source to the destination** after the cab booking is finalized.
 - * Once the trip is completed, the customer rates the driver based on his experience.
- *Role in the 2-member team*
 - * **Developed the grid**, which shows the **customer's journey** from the **source to the destination**.
 - * Worked on **creating a multithreaded environment** to get **interfaces** for the **customer and the driver**, which can **interact with each other**.
- *End Result*
 - * Learned about how a cab booking system works and is implemented.
 - * Got **experience** in developing an application using **concepts of multithreading**.
 - * Learned how to **work** on a project together as a **team** and **manage the project** as a team leader.

- *Project Description*
 - * The project **implements a database** that helps **control air traffic** by **implementing constraints on flight arrival and departure**.
- *Role in the 2-member team*
 - * Did all the **database programming**, including the **development of tables, views, procedures, triggers** etc.
- *End Result*
 - * Understood how an air traffic control system works.
 - * Learned how to **implement some functionalities of an air traffic control system** and **manage the project as a team**.

- *Project Description*
 - * **Implemented** all the **articles** of the US Constitution using **SWI Prolog** and **used some predefined facts** to **check the validity** of **specific test queries**.
- *Role in the 3-member team*
 - * **Implemented one-third of the articles and sections** of the US Constitution using **SWI-Prolog**.
- *End Result*
 - * Learned about the US Constitution and **implemented real-world problems using SWI Prolog**. Learned how to work on a project together as a **team**.

Technical Skills

Languages: C/C++, Java, Python, Matlab, SQL

Technologies/Frameworks: Numpy, Tensorflow, Scikit-learn, Keras, Pandas, Matplotlib, Node.js, Express.js, Sequelize.js, PostgreSQL, TimescaleDb, Swagger,

Developer Tools: VS Code, Jupyter Notebook, Eclipse, Sublime Text, Pycharm, Git, SWI-Prolog

Scholarship

Merit Scholarship (II Semester 2019-2020)

Feb 2021

*BITS Pilani**Pilani, Rajasthan*

- Got Merit Scholarship of about Rs 70,000 which is given to **top 2% performers** in the batch.

Leadership

Competitive Coding SIG Co-lead

Aug. 2021 – Apr 2022

*Microsoft Learn Student Ambassadors**BITS Pilani Chapter*

- **Helped** the newly recruited club members **to learn the skill of Competitive Coding**.

Memberships

Mathematics Association

Sept. 2019 – Apr. 2023

BITS Pilani

Bloackchain Society

Aug. 2021 – Present

BITS Pilani