

Nikhil Bayyavarapu

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EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY HYDERABAD	8.07/10
<i>Bachelor of Technology in Engineering Science</i>	2018-2022
NARAYANA JUNIOR COLLEGE	98.4%
<i>Board of Intermediate Education, Telangana</i>	2016-2018
PRATIBHA VIDYALAYAM	10/10
<i>Board of Secondary Education, Telangana</i>	2005-2016

WORK EXPERIENCE

MathWorks, Inc.	Hyderabad, India
Applications Engineer	JUNE 2022-Present

- Worked with the Cloud Platforms Team to design and develop backend services for MATLAB Batch Licensing used in MATLAB on AWS and MATLAB on Azure.
 - GoLang, MySQL, Docker, Git
- Worked with the Web Widgets Team to develop a Remote Data Store allowing users to offload heavy MATLAB computations to remote servers. Shipped with MATLAB R2023b.
 - JavaScript, MATLAB
- Worked with the Infrastructure & Architecture Tools team in developing in-house projects:
 - *iDetector*: Flags issues like missing headers, wrong XML Parsing, incorrect code merging. This saves hours of build time for host machines.
 - *PCIM*: An application that delivers custom MATLAB images for different Cloud Platforms.
 - *Shared DB*: Redesigned existing database schemas of different teams into one standard DB schema, reducing the complexity of queries.
- Member of the Culturals Team that organizes events to create an inclusive atmosphere and celebrate the talents of our colleagues.

RESEARCH WORK

Leveraging Machine Learning for Enhanced Database Integration

ICMLDE 2023, Publisher: ELSEVIER

- Co-authored the research paper that describes enhanced methods for Schema Matching in Databases based on similarities found in data entities.
- These methods use Kohonen, Levenshtein neural networks at their base.
- Paper has been accepted and is currently under final review.

ACADEMIC PROJECTS

Cluster Detection in Graphs

Algorithms, Guide: Dr.N.R.Aravind / C++, Graph Theory

- To begin with, I understood the Girvan Newman Algorithm, which is used to identify community structures within complex networks or graphs.
- Implemented the algorithm on real-life data sets in the following steps:
 - Edge-Betweenness Calculation & Edge Removal
 - Community Detection
- Reported distinguishable patterns from the data sets.

Matching Cut Problem (NP-Problem) in Graphs

Algorithms, Guide: Dr.N.R.Aravind / C++, Graph Theory

- To understand the Matching Cut Problem, I researched several academic articles and successfully implemented an algorithm to solve it.
- Fine-tuned parameters in the algorithm to find the optimal values needed to determine the existence of a matching cut.

Hostel Room Management System

Software Engineering, Guide: Dr.Manish Singh / NodeJS, React, SQL

- Aimed at reducing the manual work done by the Hostel Team at IITH for Room Allocation, Steward Service, Inventory Management, etc.
- We developed a user-friendly and easily maintainable web app with REST Services at its core.
- In developing, we adopted the Waterfall method, which followed industrial standards for Software Requirements, Design, and Architecture.

ACHIEVEMENTS

- Recipient of Ministry of Human Resources Scholarship for outstanding performance in Board Examinations
- 2018 JEE Mains Entrance All India Rank - 1799 out of 1.1 million attendees
- Winning team member of General Championship - IIT Hyderabad, Captain for eSports and Badminton teams

TECHNICAL SKILLS

- **Programming Languages:** C++, GoLang, Rust, Javascript, SQL
- **Databases: Relational** - MySQL, MariaDB | **Non-relational** - MongoDB
- **CI/CD:** Docker, Git, BaT
- **Tools:** MySQL, Postman, VSCode, Figma
- **Frameworks/Libraries:** React, Gorilla, NodeJS, Express.

EXTRACURRICULARS

- Student mentor for Sunshine Club IITH, ensuring a welcoming atmosphere for freshers.
- Volunteered for teaching kids in rural areas, blood donation drives, health awareness drives as a member of National Service Scheme IITH.
- I love cooking and playing sports.