

# VIKHYATH KOTHAMASU

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## Education

### Indian Institute of Technology Hyderabad

CGPA: 9.10/10.00

*Bachelor of Technology in Computer Science and Engineering*

*Nov. 2020 – Present*

- **Relevant Coursework:** Explainability in ML, Reinforcement Learning, Deep Learning, Machine Learning, Convex Optimization, Linear Optimization, Data Structures, Algorithms, Fraud Analytics, Computer Vision, Compilers, Database Management, Operating Systems, Computer Architecture, Computer Networks, Network Security, Software Engineering, Parallel Computing, Number Theory, Linear Algebra, Theory of Computation, Discrete Math, Probability, Statistics

### Indian Institute of Technology Hyderabad

CGPA: 9.67/10.00

*Minor in Entrepreneurship*

*Aug. 2022 – Present*

- **Relevant Coursework:** Innovation Management, Decision Modelling, Game Theory, Design Thinking, New Venture Creation, Entrepreneurial Risk Management, Organizational Structures, Finance for Engineers

## Research Experience

### Personalized Explainable Recommendation

Aug. 2023 – Present

*Under Dr. Konda Reddy Mopuri*

*Hyderabad, Telangana*

- Exploring transformer-based techniques to improve explainable recommendation systems by incorporating personalized prompt learning for natural language.

### 3D Multi-Object Tracking

Aug. 2023 – Present

*Under Dr. C Krishna Mohan*

*Hyderabad, Telangana*

- Developing a novel transformer-based algorithm for 3D LiDAR detection and multi-object tracking.

### Video Compression

Jan. 2023 – Oct. 2023

*Under Dr. Sumohana S. Channappayya*

*Hyderabad, Telangana*

- Developed a novel radial transform for video compression, drawing inspiration from wave dynamics.
- Recently submitted a conference manuscript to **National Conference on Communications**

### Cross-Domain Continual Learning

Jan. 2023 – May 2023

*Under Dr. C Krishna Mohan*

*Hyderabad, Telangana*

- Developed a versatile model for continual learning and explored its application in federated learning scenarios.

### Message Encryption for V2X

Aug. 2022 – Dec. 2022

*Under Dr. Maria Francis*

*Hyderabad, Telangana*

- Incorporated Key Policy Attribute-Based Encryption into a novel V2X communication protocol.

## Work Experience

### Salesforce

May 2023 – July 2023

*Software Engineer Intern*

*Bangalore, Karnataka*

- Designed and implemented a complex scalable graph-based searching and filtering feature to identify dependent and referenced entities. **Tech:** Salesforce Core, Spring, Perforce
- Generated internal learning project documentation to ensure up-to-date content and technology alignment.

### Mobile Money

Jan. 2022 – April 2022

*Full-Stack Developer Intern*

*Remote*

- Created an interactive Whatsapp chatbot for the pilot phase. **Tech:** Python, Twilio
- Created a cross-platform mobile application for completing transactions and keeping records. **Tech:** Flutter, Firebase

### WeXL

Oct. 2020 – Dec. 2020

*Academic Content Reviewer*

*Remote*

- Engaged as a question setter, tester, and reviewer for a Hyderabad-based online learning startup's initial phase.

## Scholastic Achievements

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Offered a **Pre-Placement Offer** by Salesforce for exceptional work as a summer intern. (2023)

Took part in **Inter IIT Tech Meet 11.0**, focusing on optimizing route planning for timely deliveries in the Grow Simplee problem statement at IIT Kanpur. (2023)

**Academic Excellence Award** recipient for top GPA in the Computer Science department. (2020-2021)

Achieved an All India Rank of **481** among 0.24 million candidates in the JEE Advanced conducted by the Joint Admission Board. (2020)

## Technical Skills

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**Languages:** Python, C++, C, Go, Dart, Kotlin, HTML/CSS, JavaScript, SQL, Java, Octave,  $\text{\LaTeX}$

**Developer Tools:** VS Code, Google Cloud Platform, Android Studio, Bash, IntelliJ, GitHub, Microsoft Azure, Postman

**Technologies/Frameworks:** Linux, Windows, Android, Tensorflow, Pytorch, Numpy, Next.js, ReactJS, Flutter, Django, Flask, Firebase

## Selected Projects

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**Sentiment Analysis**  | *Python, Selenium, Next.js, Hugging Face*


**October 2023**

- Developed a website to provide users with a comprehensive overview of movies and TV shows.
- Implemented Selenium to dynamically collect data from the IMDb website.
- Features implemented include summarization, sentiment analysis over time, word cloud, and recommendations.

**Cryptex Portal** | *Flask, Go, ReactJS, Docker*

**April 2022**




- Managed and enhanced the Cryptex event (Online Treasure Hunt) website, incorporated administrative features for streamlined moderation, and catered to a global participant base.

**Discord Bot**  | *OpenCV, Python, Heroku, BeautifulSoup*

**August 2021**

- Created a versatile literary bot for the college literary society, enabling games, info retrieval, and crossword generation.

**Other notable projects:**

- Designed and developed a **Postal Room Automation system** , emulating all Software Engineering Principles.
- Designed and developed a college **Cab-sharing portal** , facilitating cost-effective transportation for the community.
- Created a website for the **TEDx** chapter of IIT Hyderabad. 

**Selected course projects:**

- Trained **RL-based agents** to play games like FrozenLake, Tic-Tac-Toe, etc.
- Developed a **secure chat app** with OpenSSL and MITM attacks.
- Implemented sandbox **HTTP Request Smuggling** attacks along with novel mitigation techniques.
- Implemented a UDP-based FTP tool for **reliable data transfer** maximizing performance
- **Tangent:** Designed a language and worked towards developing a compiler for it.
- Implemented and evaluated **Mutual Exclusion Algorithms** like TAS, CAS, and bounded CAS.
- Implemented **Scheduling Algorithms** like Rate Monotonic and Earliest Deadline First to compare them via discrete event simulation.
- Implemented **custom system calls** and demand paging on the xv6 operating system.

## Positions of Responsibility

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- **Head** @ Lambda, Software Development club of IITH. Led multiple projects, managed several sessions and hackathons, and created awareness of Open Source through blogs.
- **Experience and Hospitality Head** @ TEDx IITH. Oversaw speaker experience, guest coordination, and website development for seamless and captivating event execution.
- **Teaching Assistant** @ IIT Hyderabad. Assisted Dr. Rakesh Venkat in teaching the Discrete Maths course.
- **Organizing Member** @ Cryptex, Online Treasure Hunt conducted by Elan & nVision, IIT Hyderabad.
- **Core member** @ Lambda, Quiz Club, Photography Club.
- **Operations Manager** @ E-Cell (Entrepreneurship Cell of IITH), **Events Coordinator** @ Zozimus (Literary Fest of IITH), **Experience and Hospitality Coordinator** @ TEDx IITH, **Creatives Coordinator** @ Elan & nVision (Cultural and Techno Fest of IITH), **Student Mentor** @ Sunshine (Counselling Cell of IITH).

## Extracurriculars

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- **Inter IIT Cultural Meet 5.0:** Participated in several quizzes and an oratory event representing IIT Hyderabad.
- **Milan 2022 - General Championship of IITH:** Represented the hostel team and won a Gold medal in Football.
- **IPA Abacus:** Completed all 13 levels, won several State and National level prizes, and graduated in 2016 (National 2nd rank).