

# Manas Mhasakar

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## EDUCATION

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### BITS Pilani, Goa Campus

B.E Computer Science *CGPA: 8.65*

July 2019 - August 2023

**Relevant Courses:** Discrete Structures for Computer Science, Logic, Operating Systems, Data Structures, Analysis Of Algorithms, Artificial Intelligence, Object Oriented Programming, Networking, Databases

## RESEARCH EXPERIENCE

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- **Research Fellow - Microsoft Research** July 2023 - Present  
Developed a **Personalized AI Communication Coach**, leveraging LLMs using **few shot learning**, audio processing techniques and NLP for **comprehensive speech analysis**.  
Researched and **benchmarked** LLM models, and contributed to both **frontend** and **backend** teams by integrating features.
- **Auto-Evaluation of Programs** January 2022 - December 2022  
*Dr. Anup Basil Mathew, BITS Pilani, Goa Campus*  
Worked towards **automating** the process of **evaluation of programs** using KLEE **symbolic execution engine** and CBMC **bounded model checker**.  
Automated the generation of test cases and evaluation of student submissions, and clustered semantically equivalent programs, improving the efficiency and consistency of assignment evaluation.
- **Multilingual Code Snippets Training for Program Translation** July 2022 - September 2022  
*Dr. Chandan K. Reddy, Dept of Computer Science, Virginia Tech*  
Contributed to the development of the CoST (**multilingual Code Snippet Translation**) dataset. Worked on **automated test case generation** using Python and designed an interactive website for dataset testing and interaction.
- **Sugamyata : Accessibility in Computing Education** July 2022 - May 2023  
*Dr. Swaroop Joshi, BITS Pilani, Goa Campus*  
Researched on the lack of inclusion of **accessibility** in **computer science curricula** in India, working to develop course content that is **accessibility-aware**, and evaluate its effects on student learning. include accessibility.
- **Designing and proving Convex Hull Algorithm in Coq** August 2021 - December 2021  
*Dr. Abhishek Kr Singh and Dr. Pritam Bhattacharya, BITS Pilani, Goa Campus*  
Developed a formal design of a **functional algorithm** which computes the **convex hull** of a finite set of points incrementally in **Coq** using **hypermaps**, to model **planar subdivisions** of the plane. Further used the Coq system as a proof assistant for implementing the **formal proofs**.

## PROFESSIONAL EXPERIENCE

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- **Mewt — Backend Intern** January 2023 - June 2023
  - Designed and implemented RESTful APIs using **Django Rest Framework** and **PostgreSQL**.  
Developed a GPT powered bot trained for SME use cases
  - Responsible for developing end-to-end logic for onboarding new merchants onto the platform. Wrote logic for **prefilling** business documents and user data leading to a **70%** reduction in onboarding time and **30%** boost in user growth. Leveraged **DynamoDB** Amazon's **NoSQL** database as cache to further optimize onboarding process.
  - Migrated vital **microservices** to **FastAPI**. Worked on refactoring major services like pennydrop, bank transfers and virtual account creation with third parties by identifying bottlenecks.
- **Dezerv. — Backend Intern** September 2022 - January 2023
  - Developed **REST APIs** for interacting with **MongoDB** in **Golang**. Wrote backend tests for existing codem created scripts for the cron for multiple services and adding **integrations** to external services.
  - Created parsers and crons for reading **investment data**, customer **transactions** to extract insights. Worked on verifying transactions, dealing with **duplicate tranactions**, pipeline to identify high risk customers, creating **ACL roles** and **users**.

- **ServiceNow — Software Development Intern** May 2022 - July 2022
  - Integrated **MS Teams** and **NetSuite OpenAir** with **ServiceNow developer portal**, enabling seamless communication and collaboration among project stakeholders and utilized **REST APIs** from OpenAir to fetch and display project tasks.
  - Developed and executed scripts and flows in **JavaScript** and **XML** to automate the creation, update, and deletion of project channels in MS Teams, reducing manual work and increasing developer productivity and efficiency.
- **Coulomb.AI — Backend Intern** November 2021 - April 2022
  - Implemented backend APIs and automation scripts in Python Flask for data storage, retrieval, and analysis, ensuring **high performance** and **reliability** of services.
  - Optimized and deployed a SOTA Machine Learning model that increased battery lifespan by up to **40%** and reduced charging time by up to **25%** for various EV setups, using TensorFlow, PyTorch, and AWS.

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## SKILLS SUMMARY

- **Languages:**      Golang, Python, Java, C, C++, Coq, JavaScript, SQL, Bash
- **Frameworks:**    PyTorch, Django, Flask, NodeJS, Bootstrap, ReactJS, FastAPI
- **Tools:**            MongoDB, Redis, Postman, Docker, GIT, PostgreSQL, MySQL, SQLite, AWS

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## VOLUNTEER EXPERIENCE

- **BITS Goa — Teaching Assistant**  
Teaching Assistant under the Computer Science Department of BITS Goa for the following courses :
  - Operating Systems August 2022 - December 2022
  - Data Structures and Algorithms January 2022 - May 2022
  - Introduction to Computer Programming January 2022 - May 2022
  - Discrete Structures for Computer Science August 2021 - December 2021
  - Object-Oriented Programming January 2021 - May 2021

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## POSITIONS OF RESPONSIBILITY

- **Vice President - Center for Technical Education** August 2021 - May 2022  
Managed a team of 30 motivated students to provide nonacademic skills through courses conducted by seniors based on practical learning usually in the after hours. Was involved in various mentoring activities, hackathons every semester and project fundings on campus.
- **Secretary - IEEE BITS Goa** August 2020 - May 2021  
Led a team of 60 people to organize the annual tech symposium of IEEE BITS Goa, called Lumini, which was attended by over 400 delegates virtually. Responsible for creating and publishing the first technical magazine of BITS Goa, to highlight the incredible projects and achievements of the various tech clubs.

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## EXTRA-CURRICULAR ACTIVITIES

- **Theory Winter School - IIT Delhi**  
Was selected as part of a group of 50 students to attend a winter school on Theoretical Computer Science hosted by IIT Delhi. This week long winter school involved discussions on topics ranging from algorithms, computational social choice, quantum computing, complexity theory.
- **Prof. Hari Vasudevan Memorial Prize**  
Won the inaugural edition of the 'Professor Hari Vasudevan Memorial' and received a grant of Rs. 25,000 for the same. The essay competition was conducted in memory of the late Prof. Hari Sankar Vasudevan by the Department of Humanities and Social Sciences at BITS Pilani Goa.
- **University Grants Commission (UGC)** July'21-July'23  
Role: Student member : Campus Level Grievance Redressal Committee  
Leadership position designated by the college administration at BITS Pilani K K Birla Goa Campus to understand the issues and problems raised by the students and redress their grievances by communicating the same with the institution.