

# AMOL VIJAYACHANDRAN

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## EDUCATION

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### INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY

Bachelor of Technology in Computer Science Engineering (CGPA 8.37/10)

Hyderabad, India

July 2023 - May 2027

## RELEVANT COURSEWORK

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| • Data Structures and Algorithms          | • Operating Systems and Networks           |
| • Design and Analysis of Software Systems | • Linear Algebra                           |
| • Data and Applications                   | • Probability and Statistics               |
| • Machine, Data and Learning              | • Performance Modeling of Computer Systems |

## PROJECTS

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- **Handwritten Number Recognition** — [MNIST Challenge](#)
  - Implemented a neural network from scratch, using only **NumPy** and math.
  - Used concepts such as **back propagation**, **ReLU / softmax functions**, and **gradient descent** to make the model learn.
  - Used **image augmentation** of the training dataset whilst training, increasing accuracy to **95.12%** on the test dataset with a 3-layer network (148 hidden units).
- **Distributed File System** — *Network-based Distributed File System made in C*
  - Built a network-based distributed file system with **clients**, **control server**, and **storage servers** supporting operations like read, write, delete, and streaming of audio files.
  - Implemented **asynchronous writing**, **concurrent access** to allow for scalability. Used **LRU caching** and **data replication** to boost performance and fault tolerance.
  - Designed a **comprehensive error-handling system** with **detailed logging** for efficient troubleshooting and real-time client request monitoring.
- **Shell** — *C-based POSIX Shell*
  - Developed a POSIX-compliant shell with support for **I/O redirection**, **pipes**, **background processes**, **aliases**, and **functions** along with an wide range of **custom shell commands**.
  - Developed with **modular design** in mind, allowing for simple addition of new commands, flexible input/output handling, and seamless multitasking.
- **DASA-Bot** — *A chatbot to help students in their college application journey*
  - Made using the **discord.py** library, using features available in the Discord application to let users interact with the chatbot. Uses the **Google Sheets API** to retrieve data regarding colleges.
  - Utilizes **asynchronous methods** to enable simultaneous multi-user support.
  - Implemented **administrator control**, with specific commands only available to users with specific permissions.
  - Since its launch, it has assisted **1000+ students** navigate the complexities of college applications.

## SKILLS

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**Languages:** Python, C, C++, C#, Java, HTML, CSS, JavaScript, ASM, SQL, Bash

**Technologies:** PyTorch, NumPy, Pandas, Jupyter, Selenium, MongoDB, Flask, React, Bootstrap, NodeJS, Git, Docker, AWS, Azure, MySQL