

Mohil Patel

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Education

University of Wisconsin-Madison

M.S. in Computer Science | GPA: 4.0/4.0

Madison, WI, USA

Sep. 2021 - May 2023*

Coursework: Foundations of Data Management, Database Management Systems, Machine Learning, Operating Systems

Indian Institute of Technology Bombay

B.Tech with Honors in Electrical Engineering | Minor in Computer Science | GPA: 9.58/10.0

Mumbai, India

Jul. 2016 - May 2020

Coursework: DSA, Computer Architecture, Processor Design, Digital Image Processing, Probability & Random Processes, Linear Algebra

Experience

Samsung Semiconductor

SYSTEM SOFTWARE INTERN | GPU DRIVER

San Jose, CA, USA

May 2022 - Aug. 2022

- Working with GPU Software ANGLE team, which focuses on using **ANGLE** project in Samsung's mobile device for **OpenGL** to **Vulkan** translation
- Currently working on profiling the memory usage of the ANGLE translation layer and implementing & testing various improvements

Nvidia

SOFTWARE ENGINEER | GEFORCE NOW - CLOUD GAMING SERVICE

Hyderabad, India

Jul. 2020 - Jul. 2021

- Member of Nvidia's Cloud Game Streaming **QoS team**, handling **real-time algorithms** to enhance the gameplay experience dynamically
- Ran experiments** & analyzed results (**using python**) to understand the **impact of networks parameters on cloud game streaming**
- Implemented new algorithms & optimized existing features (**C++**) to improve user experience by reducing stutters, latency & packet loss

Samsung RnD Institute

SOFTWARE ENGINEER INTERN | SMART DEVICES

Bangalore, India

May 2019 - Jul. 2019

- Worked on Samsung's Smart Devices Team, responsible for analyzing data generated from smart devices & generating useful insights
- Surveyed multiple research works on clustering techniques** & implemented them **using python** to understand and predict user behaviour

Projects

Database to Graph Conversion Tool

RESEARCH PROJECT | TEAM: **MARIUS** | **GITHUB REPOSITORY**

Oct. 2021 - May 2022

- Designed a tool (**python**) which outputs a graph (as an edge list) from an input database using user-defined configuration and SQL queries
- Implemented **out-of-memory** processing to generate **billions of edges** within **few hours**. Currently supports **Postgres, MySQL & MariaDB**

Analyzing System Characteristics of Different Graph Frameworks

COURSE PROJECT | CS784: FOUNDATIONS OF DATA MGMT | **REPORT**

Jan. 2022 - May 2022

- Gained familiarity with these graph frameworks: **Spark, GraphX, GraphFrames & GraphChi** and popular graph algorithms
- Ranked performance, network throughput (distributed frameworks), CPU, memory & disk usage for graph algorithms across these frameworks

Combining Sketch and Tone for Pencil Drawing Production

PERSONAL PROJECT | **GITHUB REPOSITORY**

Mar. 2021 - May 2021

- Studied a pencil drawing generation technique from natural images, involving **Line Drawing Generation** and **Pencil Texture Rendering**
- Implemented the code using **OpenCV & Java**, producing both Colored and GrayScale Pencil Drawing Images from a Natural Image

CHIP-8 Emulator

PERSONAL PROJECT | **GITHUB REPOSITORY**

Jan. 2021 - Mar. 2021

- Chip-8 is a 8-bit interpreted language with 35 opcodes & 4KB memory used in 1970s in many microcontrollers
- Designed a chip-8 emulator with additional functionalities like timer, keyboard & graphics **using C++ and SDL2.0**

Real-Time Server Based Communication with Hardware Encryption

FINAL YEAR PROJECT | GUIDE: PROF. MADHAV DESAI | **GITHUB REPOSITORY**

Jul. 2019 - May 2020

- Designed an end-to-end server based **full duplex communication system** using **MQTT based server** implemented in **python**
- Implemented **hardware encryption engine (AES-128)** using **FPGA (Artix-7)** & also designed microphone & speaker circuits for end points

Skills

Languages C/C++, Python, Java, SQL, Matlab, Scala, Embedded C, VHDL, \LaTeX , HTML, CSS, JavaScript

Tools & Frameworks: Spark, GraphX, MySQL, Postgres, Git, Perforce, Jupyter Notebook, sklearn, NumPy, Pandas, SciPy, Vulkan, Docker, Arduino