

Mohil Patel

✉ mohilp1998@gmail.com | 🏠 mohilp1998.github.io | 🌐 mohilp1998 | in mohilp1998

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 (**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 stutter, 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 human 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 the following 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: (*proficient*): C, C++, Python, VHDL, ~~TeX~~ (*familiar*): Matlab, Java, SQL, Embedded C, HTML

Tools & Frameworks: (*proficient*): NumPy, Pandas, Jupyter Notebook, Git | (*familiar*): Postgres, Docker, sklearn, SciPy, Perforce, Spark, Arduino