

# Mohil Patel

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## Education

### University of Wisconsin-Madison

Madison, WI, USA

M.S. in Computer Science

Sep. 2021 - PRESENT

Tentative Coursework: Database Management Systems, Computer Networks, Operating Systems, Computer Architecture, Machine Learning

### Indian Institute of Technology Bombay

Mumbai, India

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

Jul. 2016 - May 2020

Coursework: Computer Architecture, Processor Design, Algorithmic Digital Design, Data Structures & Algorithms, Logic for Computer Science, Digital Image Processing, Probability & Random Processes, Linear Algebra and Real & Complex Analysis

## Experience

### Nvidia

Hyderabad, India

SOFTWARE ENGINEER | GEFORCE NOW - CLOUD GAMING SERVICE

Jul. 2020 - Jul. 2021

- Part of Nvidia's Cloud Game Streaming QoS team, handling runtime algorithms to change streaming parameters based on network conditions
- 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, etc

### Samsung RnD Institute

Bangalore, India

SOFTWARE ENGINEER INTERN | SMART DEVICES

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 **in python** to understand and predict user behaviour

### Teaching Assistant, University of Wisconsin-Madison

Madison, WI, USA

CS552-INTRO TO COMPUTER ARCHITECTURE | PROF. SWAMIT TANNU

Fall 2021

- Responsible for organizing discussion sessions, designing assignments, clearing student doubts and preparing & checking examinations

## Projects

### 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** operating at **8KHz sampling rate** with **hardware encryption**
- Implemented the communication system using **MQTT based server** (messaging protocol for IoT Devices) written in **python**
- Implemented **hardware encryption engine (AES-128)** using **FPGA (Artix-7)** & also designed microphone & speaker circuits for end points

### Computer Architecture: Superscalar

COURSE PROJECT | EE-739: PROCESSOR DESIGN | [GITHUB REPOSITORY](#)

Jan. 2019 - Apr. 2019

- Implemented a 16-bit Superscalar Architecture with **2 instruction fetch width** & **4 parallel pipelined-execution units** using **VHDL**

### Texture Synthesis using Non-Parametric Sampling

COURSE PROJECT | CS-663: DIGITAL IMAGE PROCESSING | [GITHUB REPOSITORY](#)

Oct. 2018 - Nov. 2018

- Implemented a research paper, generating large texture images from smaller samples, using probabilistic continuity assumption in **MATLAB**

## Skills

**Languages** C/C++, Python, Java, Matlab, Octave, Embedded C, VHDL, Verilog,  $\text{\LaTeX}$ , HTML, CSS, JavaScript

**Tools** Perforce, Git, Jupyter Notebook, NumPy, Pandas, SciPy, Docker, Arduino, Code Composer Studio, Quartus, Vivado