

VIBHOR GUPTA

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EDUCATION

UNIVERSITY OF MICHIGAN ANN ARBOR

MI, USA

MASTER OF SCIENCE EECS: NETWORK, COMMUNICATION, AND INFORMATION SYSTEM

AUG 2022 – APR 2024

Coursework: Communication Networks, Probability, Wireless Systems, Digital Communication, Information Theory **GPA: 4.11/4.0**

NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR

HAMIRPUR, IN

BACHELOR OF TECHNOLOGY: ELECTRONICS AND COMMUNICATION ENGINEERING

GRADUATED MAY 2019

Coursework: Wireless Communication, CDMA, Information Theory, Digital and Analog Communication **CGPA: 9.49/10 (3.957/4)**

ENGINEERING SKILLS

- **Programming Languages:** C++, MATLAB, Assembly Language.
- **Wireless Communication:** Radio Frequency, Modem Firmware, LTE, NR, V2X, OFDM, Physical Layer, RTOS.
- **Software:** NS-3, MATLAB, P-Spice, Proteus, Arduino.

WORK EXPERIENCE

QUALCOMM

CA, USA

MODEM SW INTERN, MMW TEAM

MAY 2023 – AUG 2023

- Re-designed an algorithm for Frequency Independent **Side Band suppression** which provides **SNR improvements**.
- Reworked the call-flows between **co-procs** to allow for **faster convergence** times, and less **memory operations**.
- Delivered significant optimizations to Sideband Calibration timeline and brought savings of 30 percent.

QUALCOMM

HYDERABAD, IN

RADIO FREQUENCY SW ENGINEER, MODEM AIR INTERFACES TEAM

JAN 2020 – AUG 2022

- Led **LTE -V2X RFSW** team design, commercialization and support for the **first DSDA+V2X Modem** by **Qualcomm** from India.
- Developed RFSW solutions maintaining functionality of LTE, NR V2X in accordance with the **3GPP** spec for RF interfaces, like **ACLR, EVM, SEM**.
- Focused on **Physical** layer and programming of front end embedded HW modules (**PLL's, LNA's, PA's**) to facilitate communication and transfer of **data across protocol layers**.
- Execution of a **Real time Embedded System environment** with close time and memory constraints to honor the SW architecture and enable a **reliable modem subsystem**.

SAMSUNG RESEARCH INSTITUTE NOIDA

NOIDA, IN

NETWORK ENGINEER, COMMUNICATION PROCESSOR SYSTEM R&D

JUNE 2019 – JAN 2020

- Worked on Modem SW support for Galaxy A Devices, focused on **RRC** procedures.
- Analyzing the protocol logs across **NAS, RRC, MAC** layers and debugged Handover, CSFB Scenarios to establish the root cause.
- Designing and **developing interface between modem and application**, call processing of **3GPP/GSM/LTE/IMS**.

RESEARCH EXPERIENCE

UNIVERSITY OF MICHIGAN ANN ARBOR

MI, USA

TCP IN MMW NETWORKS

JAN 2023 – APR 2023

- Evaluated performance of conventional **TCP protocols over mmW** networks.
- Proposed and implemented a new algorithm based on **TCP Reno, Vegas in NS-3**. Also, compared its performance with TCP BBR.
- Results demonstrate the need to allow for network based dynamic allocation in TCP protocols for mmW networks.

TECHNISCHE UNIVERSITAT WIEN

VIENNA, AT

COGNITIVE RADIOS WITH 5G

MAY 2018 – AUG 2018

- Developed an algorithm for **Evaluation of Energy Detection for 5G Spectrum Sensing, Cognitive Radios**.
- Researched **complex MATLAB** environment, enhanced 5G simulator with Cognitive Radio and Spectrum Sensing capabilities.
- Succeeded in **utilization of underused spectrum**, without having an impact on 5G performance.

INDIAN INSTITUTE OF TECHNOLOGY BHUBANESWAR

BHUBANESWAR, IN

RADIO OVER FIBER

DECEMBER 2017

- Investigated performance of **Visual Light Communication** system, with application primarily in **Radio over Fiber** technology.

TECHNICAL PROJECTS

GEOFENCING IN COLLABORATION WITH IOT

NIT HAMIRPUR

LEAD DESIGNER

APR 2019

- We can trigger specific notification alarms for devices in a virtual fence by use of GPS Modules, ESP8266.
- Coastal cities are frequently affected by floods or excessive rainfall, using this we can inform all the people in virtual fence about the worsening weather conditions and updates for any public transport affected.

COMPUTER NUMERICAL CONTROL (CNC) MACHINE

NIT HAMIRPUR

CO DESIGNER

AUG 2018

- Successfully designed 2-D CNC plotter with the help of ATmega328 microcontroller, Servo motor and Stepper motors. G-code is developed in Inkscape software and execution is done in Processing-3 software.

LEADERSHIP EXPERIENCES

IEEE HKN CHAPTER

UNIVERSITY OF MICHIGAN

PROJECTS OFFICER

APR 2023 – PRESENT

- Organizing, managing, and facilitating community service opportunities for the entire chapter.

TEAM VIBHAV

NIT HAMIRPUR

COORDINATOR

APR 2018 – APR 2019

- Led and mentored a team of 35 members, to exhibition innovative projects for the technical fest of the institution.

TEDx NITH

NIT HAMIRPUR

VOLUNTEER, WEB DESIGN HEAD

FEB 2019 – APR 2019

- Organized a TED Talk at the university, collaborated with a team of about 40 volunteers and members for the event.
- Designed a website for the TEDx Talk, with the information about guest speakers, venues, and organizational committee.

HONORS AND AWARDS

UNIVERSITY OF MICHIGAN, IEEE HKN INDUCTION

APR 2023

QUALCOMM, ORION INSTA AWARD

JAN 2021

NITH, AWARD OF SILVER MEDAL

NOV 2019

NITH, SJVN SILVER JUBILEE MERIT SCHOLARSHIP

AUG 2015