Viraj Khatri

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Objective

CPU Core Verification Internship

Education

- **Portland State University** — Portland, OR
  M.Sc Electrical and Computer Engineering, 4.0 / 4.0 — *Fall 2021 – Spring 2023*
  - **Relevant Courses**: Microprocessor System Design, Computer Architecture, Advanced CompArch I, Advanced CompArch II, Intro to Hardware Security, Pre-Silicon Validation, ASIC Modelling and Synthesis
- **College of Engineering, Pune** — Pune, Maharashtra, India
  B.Tech Electronics and Telecommunication Engineering, 3.2 / 4.0 (7.99/10) — *May 2015 – June 2019*

Experience

- **Tejas Networks** — Mumbai, Maharashtra, India
  Research and Development Engineer — *August 2019 - August 2021*
  - **Networking Technologies**: Working with DHCP, VLAN tagged Traffic management, VPNs, Downstream Ingress Bandwidth, HQOS queuing, Traffic Shaping Profiles, etc.
  - **C/C++**: The software used for configuring switching capabilities of a network card is largely based in C for device drivers and C++ for higher level UI.
  - **Linux**: Network switching cards employ a modified linux kernel. Extremely familiarized with linux and its utilities. All development done in vim text editor and bash terminal environment.
  - **Feature Development**: Implemented Zero Touch In-Band Management feature request by Tejas Network's client with inputs from the Sales team and feedback from QA team.
  - **Python**: Extensive scripting to trivialize monotonous commands with flexibility to adapt to situations.
  - **Training**: Trained new recruits to the team and enabled them to contribute meaningfully.
- **DOT Sys Technologies** — Mumbai, Maharashtra, India
  Design Intern — *May 2018 - August 2018*
  - **Transistor Theory**: Implemented Pulse Width Modulation to control voltage and current levels to make a programmable power supply within the constrains of Transistor hardware.
  - **Power Electronics**: Used loose capacitors, inductions and Transformers to convert main lines supply to transistor switching compatible levels.
  - **Arduino**: Made a Programmable Battery Charger with UI implemented on Arduino + Transistor Theory and Power Electronics to manage the charging functionality.
- **Eduvance** — Mumbai, Maharashtra, India
  Intern (B.Tech. Final Year Project - Smart Paper Tracking System) — *May 2017 - January 2018*
  - **IoT**: Used RPi to collect data from devices via Bluetooth and IBM cloud services to implement data storage, sync, and decision making on cloud
  - **Bluetooth**: Used Cypress Semiconductors PSOC4-BLE boards as portable markers to be attached to files to track them and provide information to RPi for syncing.

Projects

- **riscv-simulator**: A simulator for rv32im isa. Written in C.
- **dram-controller**: A bank parallel DDR4 memory controller with access scheduling written in System Verilog.
- **fifo**: A parameterized multi-port fifo for simultaneous reads and writes.
- **ffind**: A wrapper for find command in linux to make it accept grep-like arguments. Written in golang and rust.
- **Music-Player-GO**: Feature Contributions to open source Music Player app. Written in kotlin.

Personal publications

- **Modified MD5 Algorithm for Low-End IoT Edge Devices.**: Viraj Khatri, Dr. Vanita Agarwal. ICCCNT2019