# PRATIK RAVIKUMAR SANGHAVI

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## EDUCATION

**BITS Pilani, K.K. Birla Goa Campus, Goa, India**        **August 2021**
Secured Bachelor of Engineering in Electronics and Communication with *Distinction*     **(CGPA: 9.05/10)**

## PROFESSIONAL EXPERIENCE

**Quantiphi Analytics Solution Pvt. Ltd, Mumbai, India**      **September 2021 – March 2023**
*Machine Learning Engineer -CONA PickSmart*

- Led my team to implement a computer vision solution to reduce mispicks in warehouses by identifying and tracking Stock Keeping Units (SKUs) placed on a pallet jack.
  - Optimized the tagging pipeline to reduce tagging effort by 80% developing a code pipeline that prioritizes data to be tagged based on information entropy, current confidence for an SKU, and threshold for data collection.
  - Experimented with numerous detection and classification models selecting for precision and latency.
  - Improved robustness of the tracking algorithm and enhanced it for better performance by implementing various custom logic modules to handle the effect of anomalies in the picking process.
- Improved the predictor module of an order recommendation engine increasing prediction accuracy by 5% and reducing training time by 60%.
- Prepared the initial product proposal for a supply planning solution for warehouses.

**Apple India Pvt. Ltd, Bengaluru, India**      **January 2021 - July 2021**
*Control Plane Developer Intern - Wireless Technologies and Ecosystems*

- Incorporated scenarios to ensure data continuity in handover and redirection cases between the LTE and NR RATs in the various modes of connectivity.
- Identified and fixed several bugs as part of the project by examination of the logs generated as a result of running the code with changes over the test cases.

**BITS Pilani, KK Birla Goa Campus, Sancoale, India**      **September 2020-December 2020**
*Teaching Assistant – Communication Systems*

- Held doubt sessions for students for helping them understand concepts taught in the classes and labs
- Prepared lab demonstration videos illustrating the use of Simulink towards devising systems for modulation and demodulation of digital and analog signals.

**VKS Computer Services, Mumbai, India**      **July 2020 - December 2020**
*Data Science Intern*

- Scraped and cleaned data off an OTT platform and augmented it with data from IMDB to make the data suitable for further processing.
- Designed the database for a language institute that offers in-house placements using MySQL.
- Leveraged a transformer-based model (frozen weights), added a few custom layers on it and trained it on a hand-labelled dataset for inferring the contexts of emails to assist a career counselling service to automate their workflows.

## ACADEMIC PROJECTS

**Verilog implementation of a rudimentary pipelined processor**

- Designed and simulated a 4-stage pipelined processor to execute a subset of the RISC-V ISA on Verilog and synthesized a functional model on Quartus Prime.
- Modelled datapath including control unit, instruction memory, register file and ALU using Verilog from scratch and successfully simulated on ModelSim.

**Haze Removal from Images**

- Incorporated MATLAB code for "A Fast Single Image Haze Removal Algorithm Using Color Attenuation Prior."-an existing paper on haze removal.
- Employed empirical equations and machine learning models to construct depth map, estimate atmospheric light and scattering index in order to implement the dehazing algorithm detailed in the paper.

**RAM tester**

- Developed a RAM tester using Intel 8086 to check the integrity of a given RAM module.

## TECHNICAL SKILLS

- Programming: C, C++, Python, HTML, CSS, JavaScript, Unix Shell Programming, Verilog, x86 Assembly, MATLAB
- Software Packages and Frameworks: TensorFlow, Pytorch, Flask, Django, Node, React, Pandas, NumPy, MySQL, Cadence Virtuoso, Arduino IDE, AutoCAD, CST Studio Suite, Quartus Prime

## EXTRACURRICULAR ACTIVITIES

- Obtained certifications in AWS Solutions Architect, SnowPro Core, Nvidia Fundamentals of Accelerated Computing with CUDA C/C++ and TensorFlow Developer in 2021-2022.
- Mentored 2 batches of machine learning interns at Quantiphi and helped them with their tasks during their internship in 2022.
- Served as the "Creative Head" of the Department of Arts and Deco between 2019-2020 heading brainstorming sessions and overseeing the artwork and videos produced by the department.