Gurvir Kooner

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Education

University of California - Berkeley **Aug. 2021 – May 2025**

Management, Entrepreneurship, & Technology Program (M.E.T.) *Berkeley, CA*

B.S. Electrical Engineering & Computer Sciences / B.S. Business Administration **(GPA: 3.86)**

Relevant Coursework

- Data Structures
- Efficient Algorithms
- Digital Design & ICs
- Machine Learning
- Computer Architecture
- Robotics
- Computer Vision*
- Computer Security*

Experience

Keysight Technologies **June 2024 – Present**

R&D Software Engineer Intern *Santa Rosa, CA*

- Re-engineered mapping system for **30K+** devices with WinCE firmware using **.NET Framework (C#)**. Optimized memory usage by **60%** and supported offline mapping for low-connectivity environments
- Architected advanced mapping system for desktop application using **Angular, TypeScript, WebGL, Electron** to support orientation tracking, signal overlay, and 3D map/models, increasing customer satisfaction by **30%**
- Leading migration of legacy mapping system to Embedded Linux platform using **Qt/C++**, generating **MM+** revenue in new enterprise contracts

Keysight Technologies **June 2023 – Aug. 2023**

NPI Test Engineer Intern *Calabasas, CA*

- Engineered test automation framework using **Python** and **MySQL**, featuring parallel query execution and a Tkinter GUI, resulting in **60%** reduction in data retrieval latency and **35%** improvement in QA team productivity
- Spearheaded **Python** ETL pipeline to parse, organize, and analyze test data for over **50+** hardware tests to reduce data preparation time by **85%** and increasing hardware validation throughput by **70%**
- Refactored over **10+ TCL** scripts to provide enhanced test metrics and increase test coverage by **20%**

Rimble **June 2022 – Aug. 2022**

Software Engineer Intern *San Francisco, CA*

- Led end-to-end development of **8** REST APIs on **AWS** using **Python**. Architected serverless infrastructure using **Lambda, DynamoDB, S3, and API Gateway**, achieving **99.9%** uptime and **40%** increase in user retention
- Engineered scalable ML data pipeline processing over **10GB+** daily training data for predictive AI models
- Optimized real-time APIs with WebSocket architecture by reducing latency by **20%** for data processing on Google Cloud

Projects

Image Blending System | *Python, OpenCV, NumPy* **Sept. 2024 – Oct. 2024**

- Engineered frequency-domain image processing pipeline implementing Fast Fourier Transform (FFT) and custom convolution algorithms to generate hybrid images with **95%** visual accuracy at varying distances
- Developed multi-scale image fusion system using Gaussian and Laplacian pyramids for seamless image blending

PintOS Operating System Development | *C, x86, GDB* **Jan. 2024 – May 2024**

- Developed fully-functional Unix-like kernel implementing core subsystems: user-level threading, virtual memory management, file system abstraction, and system calls
- Engineered preemptive thread scheduler with priority donation to prevent priority inversion

AI Volume Controller | *Python, OpenCV, Machine Learning* **Oct 2023 – Dec 2023**

- Engineered real-time gesture recognition system integrating OpenAI's Whisper ASR for voice activation and MediaPipe for hand landmark detection, achieving **98%** gesture recognition accuracy with 30ms latency
- Developed custom audio control interface using PyAudio, mapping gesture coordinates to logarithmic volume scale

Technical Skills

Languages: Python, Java, C/C++, Rust, HTML/CSS, JavaScript, SQL, C#, MATLAB, Verilog, RISC–V, x86, TCL
Developer Tools: Git, Perforce, Amazon Web Services, Google Cloud Platform, Docker, Postman
Technologies/Frameworks: Linux, Angular, Qt, PyTorch, GitHub, VLSI Design

Leadership / Extracurricular

MetroBot Research Group **Aug. 2021 – Jan. 2022**

Software Engineer

- Developed computer vision models to predict human behavior using **ROS, C++, Python**
- Designed object merger to create a unified model of an environment