Manikandan Gunaseelan

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Education

University of Colorado, Boulder	**August 2025 – May 2027**
MS in Computer Science	*GPA : -*
BITS Pilani, K K Birla Goa Campus	**August 2018 – July 2022**
BE in Electronics and Communication Engineering	*GPA : 8.05/10*

Work Experience

Cisco Systems   **August 2022 - June 2025**

Software Engineer II

- Pioneered the implementation of **Combinatorial Interaction Testing** for networking protocols: reducing test run times by 77%, increasing pre-release bug detection by 31%, and increasing code coverage 3x
- Selected as part of a 5-member team to resolve an extremely high-priority Telemetry issue for a key client, **Google**, impacting business worth $10M+
- Developed of tools in **python** which enhanced telemetry data collection by providing robust APIs for multi-collector operations with huge volumes of data, integrating **matplotlib** for comprehensive data visualization of device resources
- Delivered internal technical training sessions on Object-Oriented Programming principles, time complexity analysis, and advanced Python programming techniques to the engineering team, as a part of an effort to increase code quality

Cisco Systems   **January 2022 - July 2022**

Technical Undergraduate Intern

- Built a web application using **Flask**, **JavaScript** and **HTML/CSS** for tracking operational data of 60+ automation packages
- Streamlined critical daily operations by routinely identifying and resolving bugs in production automation packages, ensuring continuous functionality and reliability of internal systems

Technical Skills

Languages: Python, C/C++, JavaScript, HTML/CSS, SQL

Libraries & Frameworks: Flask, matplotlib, Cisco IOS-XR

Networking: gRPC, NETCONF, Cisco Telemetry, gNMI

Tools & Technologies: Linux, Cisco IOS-XR, Docker, Git, Postman

Relevant Coursework

Graduate Level: Database Systems, Object-Oriented Analysis and Design, Datacenter Scale Computing

Undergraduate Level: Computer Programming, Computer Architecture, Digital Design, Microprocessor Programming and Interfacing, Cryptography, Communication Networks

Projects

Implementation of MIPS Processor in Verilog | *BITS Pilani*   **April 2021**

- Verilog implementation of pipelined and single-cycle MIPS processors with a separate IEEE754 Floating point adder module
- Pipelined processor with a forwarding unit, hazard detection unit and basic branch prediction to tackle data and control hazards

Certifications

Google IT Support Professional Certificate | *Coursera - Google*   **July 2020**

- Courses on Networking Fundamentals, Operating Systems, System Administration and IT security
- Hands-on experience in the form of virtual labs conducted on Qwiklabs

Introduction to Data Analytics for Business | *Coursera - CU Boulder*   **June 2020**

- Learnt about the data analytics practices executed in the business world - how data is created, stored, accessed and then later analysed
- SQL module covered combining data from different tables, operators and subqueries