Punit Daga

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Skills

Languages JavaScript, Typescript, HTML/CSS, Java, Kotlin, Python, C++, C, Assembly, VHDL

Frameworks & Libraries React.js, Node.js, Angular, MUI (Material, Styles, Icons), React Leaflet, React Router

Other tools Firebase, Azure, Azure DevOps, PostgreSQL, SQL, FirebaseDB, JSON, Google Cloud (OAuth, Vision), Shopify API

General Skills Linux, Git, Docker, Google Cloud Platform, Azure, Azure Devops, VS Code, Fitbit API, Github Pages, Cloudflare Pages

Education

University of Ottawa *Ottawa, Canada*

BASc in Computer Engineering with a focus on hardware design and networking. *September 2018 - May 2024*

- **Networking:** IPv4/IPv6 Addressing, Network Design & Analysis, Data Link Layer Protocols, Error Detection & Correction, Network Security Protocols, Quality of Service (QoS), Flow & Congestion Control, TCP/UDP Protocols, LAN/WLAN, Routing Algorithms, Packet Switching
- **Hardware Design:** Digital Computer Design, CPU Design & Control, Memory Unit Design, FPGA Design, VHDL/HDL Design, Embedded Systems, Advanced Sequential Logic, Multithreading, ARM Assembly, GPU Hardware Design
- **OS & Embedded Systems:** RTOS Development, Real-Time Systems Design, Concurrency and Synchronization, CPU Scheduling, Memory Management, Fault Tolerance, Device Driver Development, Embedded Systems Hardware-Software Codesign
- **Software Development:** Object-Oriented Programming (OOP), Data Structures, Complexity Analysis, Concurrency and Synchronization, Memory Management, Software Development Lifecycle, Requirements and Design, UML for Object-Oriented Analysis, Client-Server Architecture, Security Mechanisms, Performance Tuning, Middleware Design, Distributed Systems, Protocols, Formal Languages

Work Experience

Software Developer *Toronto, Canada*

Lonehaven *January 2022 - December 2022*

- Created React.js marketing website and Shopify stores for clients using mui, Shopify API, React.js, Angular, and AWS Servers to serve 20,000 customers
- Overlooked the creation of company website; managed 5 student developers overlooking projects for 6 months

Software Engineer *Ottawa, Canada*

Ottawa Department of Medicine *August 2020 - April 2021*

- Collaborated with Microsoft Engineers to create a webapp using React.js for questionnaire and PDF renderer for internal usage
- Created UI using mui, used react-pdf to render PDF, running on a Node.js server on Azure
- Other tools used: Azure Devops

Network Technician *Ottawa, Canada*

Smart Living Properties *July 2019 - May 2020*

- Provided on-location home internet solutions and resolved Gozi spyware infections on multiple networks
- Implemented enterprise level network solutions using Cisco Meraki switches
- Assisted in the troubleshooting and maintenance of network infrastructure
- **Skills:** Network Security, Cisco Meraki, Network troubleshooting, Customer service, Technical support

Projects

Blockchain Project (Work in Progress) *Ottawa, Canada*

pewnit.com *May 2024 - Present*

- Explored blockchain technology for a personal project, focused on enhancing authentication and security in a centralized environment

ScrapYard - Automated Trash Sorting System *Ottawa, Canada*

University of Ottawa *September 2022 - April 2023*

- Created a sustainability focused garbage and recycling sorter prototype for use in public spaces
- Created the web app, Express.js server, PostgreSQL server, OAuth, React Leaflet, and managed Google API/Firebase
- Contributed to development of AI Vision and control of electronics

CEG3155 UART Traffic Light Controller *Ottawa, Canada*

University of Ottawa *September 2021 - December 2021*

- Developed a VHDL-based traffic light control system using Finite State Machine (FSM) with one-hot state assignment and Sunggu Lee class equivalence method for state minimization
- Assembled a prototype for CMOS to RS-232 signal conversion using a breadboard, capacitors, and MAX232 dual transmitter/receiver
- Created a micro-controller simulated FSM interfacing with UART in structural VHDL
- Implemented UART's Transmit and Receive Shift Registers using 8-bit PIPO and SIPO shift registers with D Flip-Flops
- Designed a UART Transmitter with TSR, a 16-bit counter, and D Flip-Flops, enabling ASCII character transmission to an Altera DE2-115 FPGA via the MAX232 Tx connection

Emergency Call Bell System *Ottawa, Canada*

University of Ottawa *January 2020 - April 2020*

- Implemented back-end services for a real-time emergency response system, with a focus on networking and real-time data processing
- Developed and integrated networking features for fall detection and automated emergency response, ensuring system reliability and efficiency
- Worked in a multidisciplinary team, focusing on networking, system analysis, and embedded system programming
- **Technical Skills:** Networking, Real-Time Systems, Java, Fitbit API Development, Embedded Programming