Om Patel

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Education

University of Toronto – BASc in Electrical Engineering + PEY Co-op **Expected May 2028**

- **Relevant Coursework**: Signals and Systems, Digital Systems, Computer Organization, Data Structures & Algorithms, Analog & Digital Electronics, Hardware Design & Communication, Computer Networks

Skills

Languages: Verilog, SystemVerilog, C, C++, RV32 Assembly, SQL, JavaScript, Python
Tools: Intel Quartus, ModelSim, Altium Designer, LTSpice, SUE/MAX, Jira, Postman, RabbitMQ, Virtuoso QA, MATLAB
Hardware: Oscilloscopes/Lab Equipment, Python Scripting (unit testing), PCB Design, Rapid Prototyping, Soldering

Experience

Analyst Software Tester Intern | *FNZ* **May 2025 – Aug 2025**

- Identified 30+ platform defects and tested 55+ fixes using SQL, RabbitMQ, API logs, and Postman for root cause analysis, reduced pending retest backlog by 50%+ and unblocked POD specific development
- Debugged and maintained 45+ automated Virtuoso QA test cases using JavaScript, improved test accuracy by 18%
- Executed 3x/week regression tests on pre-UAT env and sanity checks on SIT env to ensure proper platform functionality
- Piloted an automated test plan for Client Onboarding, wrote 10+ test cases contributing to full functionality coverage
- Built 10+ test matrices and 20+ test datasets across platform features, contributed to detailed end-to-end documentation
- Designed and delivered a solution for FNZ-BMO Fund Classifications by integrating 2 key market data feeds (Morningstar, FundSERV), mapping XML fields to DB tables/flags for downstream calculations and authored 6+ signed-off stories

Data Analyst & Administrative Assistant | *University of Toronto Engineering Career Centre* **May 2024 – Aug 2024**

- Analyzed 1,200+ survey results in Excel to identify student interests, industry preferences and service quality for the PEY Co-op program, resulted in leading a presentation to 15+ staff and program coordinators
- Compiled Annual and Seasonal Recruitment Reports in Excel using 2,000+ student records to analyze hiring trends
- Developed a Power Automate flow to route student emails to department coordinators based on attachments
- Regularly scanned employer contracts and created work-term records, job postings and interview schedules

Team & Programming Lead | *University of Toronto* **Jan 2024 – Apr 2024**

- Led a team of 4 engineers to develop a prototype web-application to collect data for research with Dr. Fa Hsuan Lin
- Translated Figma wireframes into a functional interface by applying development skills in HTML, CSS, and JavaScript
- Presented design reviews and benchmarking results to management, client and an audience of 20+ individuals

Projects

Radio Power Amplifier and Low-Pass Filter PCB | *Altium, LTSpice, Soldering* **Github** | **Jan 2025 - May 2025**

- Constructed a Class E power amplifier and 7-stage maximally flat low-pass filter, obtaining 2.7W output power across antenna load (30dB gain) and 1.69% total harmonic distortion, meeting requirements for radio integration
- Designed a multi-layer PCB in Altium Designer with optimized trace widths, pours, and via placements for high-frequency (16MHz) and high-voltage (60V) operation, achieving 76% power efficiency while maintaining reliable signal integrity
- Executed automated hardware unit testing using Python to interface with oscilloscope, DMM, and waveform generator

Human Benchmark: Memory Clone | *DE1-SoC FPGA, RISCV Processor, Embedded C, I/O Devices* **Github** | **Apr 2025**

- Developed a memory-game in embedded C on the DE1-SoC FPGA, interfaced with display, audio and keyboard devices
- Managed vsync, audio, and memory with double/single buffering and event handling as per RISCV architecture

B.O.B | MakeUofT 2025 Hackathon, 2x Winner | *Arduino, Sensors, Gemini API* **DevPost** | **Feb 2025**

- Developed a smart recycling bin that automatically opened/closed based on available capacity (ultrasonic, IR sensors) and determined recyclability using Gemini AI and OpenFoodFacts APIs
- Implemented real-time bin control through serial USB communication between Streamlit (Python) and Arduino
- Awarded Best Hack for Sustainability & Green Tech (out of 20+ teams) and Best .Tech Domain Name (out of 60+ teams)

Gomoku | *DE1-SoC FPGA, Verilog, Intel Quartus, Intel ModelSim* **Github** | **Nov 2024**

- Programmed a 13x13 Gomoku game in Verilog on a DE1-SoC FPGA, combining real-time PS/2 keyboard WASD input for controls, VGA output rendered at 320x240 resolution and complex FSMs for game logic
- Verified functionality by developing 15+ ModelSim testbenches and analyzing Intel Quartus synthesis reports