Arnav Patil

arnav.patil@mail.utoronto.ca | (587) 830–1203 | linkedin.com/in/arnavpatil | arnav-patil-12.github.io

Education

University of Toronto Sept 2023 – Apr 2028
BASc. in Electrical and Computer Engineering with PEY Co-op *Toronto, Canada*

- **GPA: 3.60/4.00** with recognition on Dean's Honours List
- **Minor in Engineering Business / Economics**

Coursework

Languages & Tools: C/C++, Verilog/SystemVerilog, Python, Assembly, Quartus Prime, Vivado, Cadence Virtuoso
Hardware Courses: Computer Architecture, Analog & Digital Electronics, Computer Hardware, Signal Processing
Software Courses: Operating Systems, Computer Networks, Embedded Programming, Object-Oriented Languages
Math Courses: Multivariable Calculus, Linear Algebra, Complex Analysis, Probability, Finance & Microeconomics

Experience

Digital IC Design Intern Starts May 2026
Marvell Technology *Toronto, Canada*

- Will be responsible for block- and chip-level RTL design and verification for Marvell's $10 - 224$ Gbps SerDes IP.

Teaching Assistant Sept 2025 – Present
Faculty of Applied Science & Engineering *Toronto, Canada*

- Facilitating 40-student tutorials for **APS100: Orientation to Engineering** and expanding on lecture content.
- Leading discussions on the transition to engineering studies, time-management strategies, and career pathways.

FPGA Engineer Intern Feb 2025 – Aug 2025
Department of Electrical & Computer Engineering *Toronto, Canada*

- Researching with Prof. Roman Genov's **ISML** research group on CMOS-based depth-sensing imaging technology.
- Achieved 800 Mbps throughput by optimizing sensor IC timing, ideal for time-of-flight imaging applications.
- Implemented the SPI and I2C protocols in Verilog to interface with the integrated circuit and board peripherals.
- Verification of sensor schematics on Cadence Virtuoso, ensuring that functional and timing requirements are met.

Systems Design Engineer Sept 2024 – Apr 2025
University of Toronto Machine Intelligence Student Team *Toronto, Canada*

- Developed a compute platform for UTMIST to optimize AI/ML jobs using GPU-accelerated cloud computing.
- Wrote an API to create teams and users, and to access various cloud platforms and check GPU availability.

Selected Projects

Nios-V Sonar System | Source Code

- Integrated an ultrasonic sensor and servo motor into the FPGA-based Nios-V soft processor via GPIO ports.
- Designed & implemented BJT pull-up/pull-down networks for safe voltage conversion between FPGA and sensor.
- Implemented polling using machine timer, calculating distance between 20 cm to 2 m within 1 cm of precision.

DE1-SoC Arcade Game | Presentation Slides

- Developed a blackjack game on an FPGA, handling complex game states such as dealing, betting, and scoring.
- Simplified hardware peripheral control from top-level modules by writing API-like wrapper RTL over Altera IP.
- Fixed compatibility issues in provided IP by writing a **script** to re-format memory initialization files (`.mif`).

Extracurricular Activities

Policies and Structures Committee Member Jun 2025 – Present
University of Toronto Engineering Society

- Supporting EngSoc's legislative foundation and deliberating on policies impacting a 5000-strong student body.

Sustainability Director Apr 2024 – May 2025
University of Toronto Engineering Society

- Oversaw 5 initiatives and wrote a **Sustainability Policy** to support discourse/action on environmental matters.