Nafiz Hasan

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https://nafiz1.github.io/

Education

- **University of Waterloo** — Waterloo, ON
  M.A.Sc., Electrical Engineering (Grades: 80%) — *Sep. 2002 - May. 2004*
  - Relevant courses: Semiconductor Devices: Physics and Modelling, Digital VLSI Design, Amorphous Silicon, Mixed-signal modelling with VHDL-AMS
- **University of British Columbia** — Vancouver, BC
  B.A.Sc. Engineering Physics (Electrical Engineering Option) — *1997-2002*
  - Graduated with Honors, **86%** cumulative average, and Dean's Honour List each year.
  - Relevant courses: Solid-state physics, Quantum Mechanics, Semiconductor Devices (BJT, HBT, FET, analog IC layout and simulation), Digital Systems Design using VHDL, Waveguides and Photonics, RF, Analog/Digital Communications Systems, Analog Hardware Design

School Projects

- **SpectraVu Medical** — Vancouver, BC
  Engineering Physics Project Lab, APSC 479 — *Sep. 2001 - Apr. 2002*
  - Designed and implemented a digital video processing system for lung cancer imaging,
  - Selected components (video DAC, ADC) and created schematics in OrCAD.
  - Implemented image processing functions and data control blocks in VHDL using an Altera ACEK1K FPGA. Learned VHDL and MAX+PlusII development tool on my own time.
- **Analog Circuit Design and MOSFET Device Design**
  Semiconductor Devices Course, EECE 480 — *Sep. 2001 - Apr. 2002*
  - Designed a high-frequency cascode amplifier, simulated it using HSPICE, and did layout using Cadence Virtuoso Layout software. Manufactured on a Gennum GA911 chip.
  - Designed and simulated a deep sub-micron (70 nm channel) MOSFET using MEDICI.
- **Low-cost Optoelectronic Localizer**
  Engineering Physics Project Lab, APSC 459 — *Sep. 2000 - Apr. 2001*
  - Worked on the LoCOL (Low-cost Optoelectronic Localizer) project in a team of three.
  - Programmed a PIC microcontroller to control the timing of the three CCD cameras.
  - Designed power supply and re-built electrical circuits for the CCD sensors, processors.
- **Other Projects**
  UBC and at home — *1999-2000*
  - Designed and debugged a digital voltmeter using a Motorola 68000 processor.
  - Added features to the digital voltmeter including scrolling text, and a warning buzzer, which won 3rd place in the IEEE Voltmeter Competition.
  - Constructed and debugged a digital clock on a PCB for PHYS 159.

– Built an AM short-wave radio at home, on a 2" × 2.5" piece of breadboard.

Awards

Faculty of Engineering Scholarship ($2,300)	2002
Ontario Graduate Scholarship (OGS) ($15,000)	2002-2003
Industrial NSERC Undergraduate Research Award ($4500)	2002
UBC OSI (Outstanding Student Initiative) Entrance Scholarship ($10,000)	1997-2002
Engineering Physics 50th Anniversary Scholarship ($600)	2001
Anne. M. Mack Scholarship ($500)	2001
NSERC Undergraduate Student Research Award ($4000)	2000
United Food and Commercial Workers Union, Local 1518 Scholarship ($1000)	1998
Top Senior Math Student Award	1997
B.C. Provincial Exam Scholarship ($1000)	1997
B.C. Government Passport to Education ($800)	1997
James Whiteside Elementary Parent Advisory Committee Award ($200)	1997

Skills

Languages: C/C++, LaTeX, Java, SPICE, MEDICI (TCAD), VHDL/VHDL-AMS, 68000 and PIC Assembly

Operating Systems: Linux (Debian), Solaris, UNIX, MacOS X, Windows 95/98/NT/2000/XP

Applications: Mathematica, MatLab, GNU Octave, LabVIEW, Cadence, LaTeX, OpenOffice, MS Office XP, OrCAD schematic capture & PCB layout, Altera MAX+PlusII VHDL FPGA Design

Lab Skils: Digital/Analog Scopes, Spectrum Analyzer, Function Generators

Fab Skills: PECVD and sputtering deposition, UV lithography, wet etch, dry etch (RIE), mask aligner, step profiler, ellipsometry, infrared spectroscopy, x-ray diffraction

Miscellaneous: software configuration management, strong verbal and written communication skills, excellent troubleshooting and debugging skills, exceptional problem solving skills, good teams skills

Interests

Academic: Solid state devices, nanotechnology, photonics, microcontrollers, RF/wireless

Sports: Playing hockey and swimming

Computers: Currently maintain two official Debian Linux packages, Mozilla beta tester, enjoy using and learning Linux systems, Building electronics projects at home, and writing JAVA software

Musical: Playing guitar and piano

Membership: Student member of IEEE since 1998, Materials Research Society member since 2002

Other: Reading novels