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Bhareth Kachroo

Skills

Reading	*500+ pages a day, mostly textbooks*
Programming	**Assembly (PIC/ARM), Java, Python, C, HTML5, Javascript (Node), Wolfram Language**
Algorithms	*Won Canadian Computing Competition.*
Computing	*Mathematica, Matlab, Sage/Scipy, R, LaTeX, Git, Embedded (PIC/Arduino)*
Math	*Linear Algebra, Functional Analysis, Numerical Analysis, Prob/Stats, Diff. Equations*
Public Speaking	*Enjoy it and have spoken in front of 200+ people.*

Projects

2016 **Robot Design and Construction**, *University of Toronto*.

In a team of three tasked with designing and building a robot from scratch to navigate a course and scan labels using a retracting arm, my role:

- Conduct overall design process, evaluate/prototype candidate designs;
- Learn and design the program operating the PIC877 microcontroller, to complete the course in <3 min.;
- Control actuating motors, timing, and polling/interrupt sensors;
- Write the assembly code and pass unit tests in 24 hours;
- Integrate the microcontroller board with motors and power circuits in 2 weeks;
- Rewrite program to use polling instead of interrupts because of sensitivity issues;

2015 **NFP Collaboration**, *ACORN*, Toronto.

As a member of Engineers Without Borders I collaborated with ACORN, a Not-For-Profit organization of community members fighting to influence policy, to improve their web presence (Drupal).

2015 **Worm Composting Rig**, *University of Toronto*.

I led a team of four students to design a worm composting rig as part of the Praxis design course in Engineering Science. We constructed working prototypes and successfully presented our design at a showcase. I:

- Constructed and tested a design that reduced total composting time by 60%;
- Presented to the public in a final showcase was graded A+;

2013–2014 **App Development**, *Bayview Glen*, Toronto.

I built a sheet-music database app that could scan barcodes using PhoneGap and Javascript for my music teacher.

Education

2014–2018 **B.AS. in Engineering Science (Physics)**, *University of Toronto*, Toronto.

A rigorous engineering program with a focus on first-principles. Currently in third year.

- **David C. Naylor Scholarship**: A $20k entrance scholarship awarded to 5 students on the basis of leadership and academic excellence.