

Anjandev MOMI

Electrical and Computer Engineering MASc Student

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 <https://www.momi.ca>

INTERESTS

- › Programming
- › Power Electronics
- › Mechanical Design
- › Multidisciplinary problems
- › Control Theory

SKILLS

- › Python, C, Matlab, Simulink, Latex, Labview, go, HTML/CSS, POSIX Shell
- › GNU/Linux, Git, Solidworks, KiCad
- › Mechanical Design
- › Finite element analysis

EDUCATION

2020 Fall to 2022 Summer University of Toronto | MASc in Electrical and Computer Engineering
2015 Fall to 2020 Summer Simon Fraser University | BAsC in Mechatronics Systems Engineering **CGPA: 4.09/4.33**

EMPLOYMENT

- September 2020 Present** **Master of Applied Sciences Research Student, UNIVERSITY OF TORONTO, Toronto ON**
- › Research project involves applying the Constrained Unscented Kalman Filter to online parameter estimation of synchronous generators
 - › Project code (to be released) will be 100% Open Source with simulator and filter written in Python
 - › Added Constrained Unscented Kalman Filter to filterpy library and documented simulator code (DynPSS-Sim)
 - › Teacher assistant for Linear Control Theory and Energy Systems and Distributed Generation courses
- Power Systems Control Theory Research Python
- September 2018 May 2019** **Mechanical Engineering Co-op, SCHNEIDER ELECTRIC SOLAR R&D, Burnaby BC**
- › Energy Storage System: Researched and analyzed Lorentz force developed on bus bars during battery short circuit
 - › Used finite element analysis and optimization to increase the factor of safety of an engineer's energy storage system design by 200%
 - › Researched and recommended force sensor for battery short circuit test - demanding constraints: force to be measured was very large and dynamic
 - › Considered serviceability and safety issues to design labels according to ISO standards complying with regulations in diverse countries
 - › Improved folded sheet metal mechanical design to prevent tolerance stack-up, improve design for assembly, and consequently reduce inverters broken in shipment
 - › Designed an overmolded DC voltage probe for 1500 V applications under strict regulations for international markets and multidisciplinary design considerations
 - › Improved over 70 mechanical engineering drawings via Solidworks to design for manufacturability
- Mechanical Design Multidisciplinary problems Solidworks Finite element analysis
- May 2017 August 2017** **Maintenance Mechanical Engineering Co-op, TRANSLINK (SKYTRAIN), Burnaby BC**
- › Analyzed existing maintenance procedures, recommended a robot to automate maintenance tasks, and worked towards company's goal of moving towards predictive maintenance
 - › Discovered the cause of a part's failure and designed a replacement part to reduce stress by 25% in failure area using finite element analysis in Solidworks
 - › Diagnosed that a part in the assembly was being manufactured incorrectly and causing a different part to wear out prematurely. Constructed a repair procedure for the broken parts and worked with the manufacturer to correct the improperly manufactured part
 - › Designed lifting jigs and documented a procedure for the repair of car axles
- Mechanical Design Solidworks Finite element analysis

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SELF-DIRECTED PROJECTS

SXMO: MOBILE INTERFACE OPEN SOURCE CO-MAINTAINER

OCTOBER 2020 - PRESENT

 <https://sxmo.org>

- › Survey reports that the Sxmo mobile interface has over 100 people daily driving the Pinephone as of January 2022
- › Assisted code reviewing patches from 54 contributors
- › Added support for sending sms messages over ssh, packaged applications, and fixed audio call issues
- › Mentored contributors, managed code releases, documented technical decisions, and helped direct the project
- › Fixed network bugs and user experience in upstream installer (pmbootstrap of postmarketOS)

    

LIFT

AUGUST 2019 - FEBRUARY 2020

 <https://git.sr.ht/~anjan/lift>

- › Built an app to journal workout progression for multiple weight training programs
- › Program's progression and daily routine is handled by the app

 

TECHNOVUS SFU MECHATHON

NOVEMBER 2016

- › Worked with a team of four in order to design a safe rowing machine for a physically challenged war veteran
- › Rowing machine would be used to aid in the physical therapy
- › Presented design at a university event for over 100 people and 3 professor judges - competed against twelve other teams and came in second place



EXTRA-CURRICULAR

June 2019
July 2020

Power Electronics Designer, SFU TEAM SATELLITE, Surrey BC

- › Taught first year Mechatronics students about electrical design
- › Researched active and passive battery balancing techniques and documented their pros/cons
- › Simulated various battery balancing techniques in Simulink
- › Chose over 50 parts conforming to power team's defined design constraints
- › Created battery monitor and balancer design layout in KiCad with special consideration to redundancy, sensor noise, and reliability

  

April 2018
April 2019

Vice President - Services, SFU MECHATRONIC SYSTEMS ENGINEERING STUDENT SOCIETY, Surrey BC

- › Mentored first and second year students in club administration and website design
- › Helped advocate and build the website for the first Engineering careers fair at SFU Surrey campus <https://systemsfair.ca/>
- › Advocated for students' needs in new changes to SFU's Mechatronic Systems Engineering program curriculum
- › Assisted in organizing the Student Society's external accounts (domain names, emails, etc.) and documentation
- › Created a website for SFU Mechatronic Systems Engineering Student Society <https://msess.ca>

September 2015
May 2016

Programmer, SFU UAV - TEAM GUARDIAN, Surrey BC

- › Worked with a team to reduce computation time for image mapping and image computer analysis for UAV system
- › Wrote documentation on how various programs could be applied to our workflow
- › Worked on understanding older code-base (written in Python), and analyzed photo meta-data
- › Synthesized various software solutions in order to create an optimal workflow for data

