

# Abdul Fourteia

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## Education

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**Bachelor of Engineering, Mechanical Program (University of Victoria)** Sept/2012 – Oct/2017

- Graduated with distinction (Top 20%) with graduating GPA of 7.95 out of 9.
- Completed 16 months of co-op work.

## Work Experience

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**Robotics Engineer, Assistive Technology Laboratory (Victoria, BC)** Jan/2018 – Aug/2019

*Research group developing a mobile robot with modular accessories that can serve people with disabilities in their daily life activities.*

- Prepared requirement and engineering documents for clients and potential donors.
- Lead the design of the autonomous mobile platform. Designed and implemented the mechanical, electrical, and software system of the mobile platform.
- Performed engineering analysis like FEA, DFMA, DFMEA, power budget, and duty cycle estimation.
- Integrated the navigation stack from ROS to enable autonomous navigation.
- Software tools I used are SolidWorks, KiCAD, ROS, OpenCV, C++, and Python.

## Co-op Work Experience

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**Machining Assistant, UVic Machine Shop (Victoria, BC)** Sept/2016 – Dec/2017

*Primary Machine shop for the university serving undergraduate design courses and research groups.*

- Supervised and taught students how to use the manual mil for their machining class.
- Used CNC machines, 3D printers, and laser cutters to create parts for various research groups and student clubs.
- Advised post-graduate students on their designs to reduce machining cost (DFMA).
- Software tools I used are SolidWorks, and Mastercam.

**Research Student, West Coast Wave Initiative (Victoria, BC)** Jan/2016 – Aug/2016

*West Coast Wave Initiative is a research group at the University of Victoria aims to study the wave energy off the BC coastline and assess the feasibility of integrating this energy into the electrical grid.*

- Developed wave energy converters (WEC) models on Simulink for post-graduate students and optimized their power output.
- Analysed and verified dynamic simulations of WEC systems in virtual sea conditions.
- Generated MATLAB scripts for data processing, analysis and visualization purposes.
- Software tools I used are MATLAB, Simulink and ProteusDS.

## Related Skills and Experiences

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### Computer skills:

Microsoft Office Suite (Word, Excel and PowerPoint), SolidWorks, Siemens PLM, Mastercam, ANSYS, MATLAB/Simulink, Python, C++, and C.

### Engineering skills:

- Experience generating CAD models and Animation, in addition to conducting CAE analysis and preparing engineering drawings for fabrication.
- Experience in embedded programming utilizing interrupts in C/C++, as well as data analysis on MATLAB and Python.
- Experience in fabricating parts out of metals, plastics, and composite materials.

## Engineering Project Highlight

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### Control Systems Developer, UVic Formula Hybrid Team

Sept /2018 – Oct/2019

*An engineering student club that builds hybrid vehicles for competitions.*

- Created a plant model of the car for model-based design and HIL simulations.
- Redesigned the control systems for the car using Simulink.
- Developed a new controller around the TI C2000 MCU, and programmed it using the Embedded Coder toolbox from MATLAB.
- Performed instrumentation, signal processing, and data analysis to optimize the vehicle performance and reduce noise in the system.
- Software tools I used are dSPACE's ControlDesk, CANdb++, MATLAB and Simulink.

### Technical Lead, Undergraduate Capstone Project

May/2017 – Aug/2017

*Worked in a team of 6 student to develop an autonomous mobile robot with a camera manipulation system.*

- Managed the team deliverables to meet the class deadlines.
- Designed and fabricated the robot's mechanical components including the camera gimbal.
- Software tools I used are SolidWorks and Microsoft Project

### Mechanical Lead, Popsicle Bridge Crusher Machine Project

Jan/2017 – April/2017

*Worked in a team of 3 to design and build a popsicle bridge crusher machine for the Victoria chapter of EGBC.*

- Designed and fabricated the structure.
- Conducted FEA simulations to verify the performance.
- Provided progress update to the client during the development.
- Software tool I used is SolidWorks.

### Project Manager and Co-Lead, UVic Rocketry Team

April/2016 – Oct/2017

*An engineering student club that builds sounding rockets for competitions.*

- Managed the logistic side of developing two rockets.
- Increased the club's annual budget from \$13,000 to \$20,000.
- Assisted in developing and machining components for the rockets.
- Software tools I used are SolidWorks, Mastercam and ANSYS.

**Structural Lead, UVic Satellite Design Team**

Sept/2015 – Aug/2016

*An engineering student club that builds CubeSats for competitions.*

- Supervised the mechanical development and manufacturing of the ECOSAT-III.
- Validated the vibration simulation of ECOSAT-III using test bench at David Florida laboratory.
- Software tools I used are Siemens NX and MATLAB.

**Mechanical Team Member, UVic AERO Team**

May/2014 – April/2016

*An engineering student club that builds unmanned aerial systems for competitions.*

- Designed an antenna tracker system and the camera gimbal.
- Worked on integration and testing the electronic components for the fixed-wing UAV.
- Software tools I used are SolidWorks, C, MATLAB.

## Achievements and Awards

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- UVic faculty of engineering dean's list for graduating top 20% of the Fall 2017 class. Oct/2017
- Winner of the IEEE best capstone project award (40 teams). July/2017
- UVic Rocketry won 1<sup>st</sup> place (90 teams) in the SDL Payload Challenge at Spaceport America Cup. June/2017
- UVic Rocketry won 3<sup>rd</sup> place (44 teams) at the 2016 Intercollegiate Rocket Engineering Competition. June/2016
- UVic AERO won 4<sup>th</sup> place (14 teams) Unmanned System Canada student competition. May/2016
- Placed 2<sup>nd</sup> (75 teams) in the first-year robotic engineering design competition. April/2013
- University of Victoria Entry Scholarship. Sept/2012
- Ranked Top student with Graduated from high school in Libya with top ten marks in the whole country (50,000 students), which granted me a full university scholarship. May/2010