

Rahul Shagrithaya

Mechanical and Manufacturing Engineering Co-op Student

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HIGHLIGHTS OF QUALIFICATIONS

- Currently enrolled in level 1 of the Masters in Manufacturing Engineering program and looking for a 4-, 8- or 12-months Co-op position starting September 2022
- Experience in designing, modelling, drafting, composite layup, structural analysis, fluid analysis, and programming
- Exceptional teamwork and leadership skills demonstrated as Structures Subsystem Engineer in the Society of Automotive Engineers (SAE) student project team
- Coursework in Automation and Robotics, Artificial Intelligence (AI) and Machine Learning (ML), Mechanical Design, Finite Element Methods (FEM), Computer-Aided Design and Machining (CAD-CAM)

EDUCATION

MEng Manufacturing Engineering

January 2022 - Expected graduation April 2023

McMaster University, Hamilton ON

- Emphasis on Manufacturing Automation and Industry 4.0
- Relevant courses: Advanced Robotics and Automation, Artificial Intelligence (AI) and Machine Learning (ML)

BTech Mechanical Engineering

Graduated July 2021

Manipal Institute of Technology, Manipal, India

- Cumulative grade-point average of 8.30 on a 10.0 scale
- Received a minor in Business Management
- Relevant courses: Computer-Aided Mechanical Drawing, Computer-Aided Design and Machining (CAD-CAM), Finite Element Methods (FEM)

RELEVANT EXPERIENCE

Research and Development Intern

August 2019 – December 2019

Curious TechLabs, Manipal Institute of Technology – Manipal, India

- Collaborated with 4 doctors and a professor to design tumour-removal Endoscopic scissors to improve diagnosis of small visible tumours in bladders
- Collected and researched details of 2 available endoscopic scissors to implement an improved and safer design
- Designed and assembled more than 15 CAD Models in Siemens NX and rendered images, videos, and illustrations in KeyShot that were used for documentation and presentation
- Participated in monthly meetings with the doctors to communicate updates and discuss possible improvements
- Patent published June 17, 2021, "A scissors-needle system for intra-cavitary hydro-dissection and excision of tissues," WO/2021/116776

Research and Development Intern

June 2019

MLBE Laboratory, Cracow University of Technology – Krakow, Poland

- Assisted in the development of environmentally friendly and sustainable systems to minimize energy consumption
- Designed a 600mm diameter heat exchanger in Fusion360 that could heat water using hot kitchen air by 10°C and analyzed the heat and fluid flow in Ansys Fluent
- Gained an understanding of the technical, economic, social, and environmental concepts of sustainable living

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SKILLS

Software: Siemens NX, Fusion 360, CATIA, AutoCAD, Ansys Mechanical, Ansys Fluent, FANUC Roboguide

Programming: Python, C++

Languages: English, Hindi

RELEVANT PROJECTS

Performance analysis

January 2021 – July 2021

- Analyzed high-speed three-lobe bearings using Fluid Structure Interaction (FSI) in Ansys Workbench considering 9 different properties to compare the structural strength of all combinations
- Simulated 24 combinations of bearings with various eccentricities and materials to collect 3 different physical properties of the bearing when it is subjected to high-speed rotation

Finite Element Method (FEM) solver and assembly line balancer software

January 2021 – April 2021

- Programmed 3 software to solve FEM problems in beams and trusses, and production assembly line balancing problems to minimize bottlenecks and increase production
- Developed Graphical User Interfaces (GUIs) using python to receive the problem data from the user and showcase the results in a user-friendly format like graphs and tables

Micro-class Unmanned Aerial Vehicle (UAV)

April 2018 – November 2019

- Collaborated with a team of 38 to research high payload carrying and high strength to weight ratio UAV designs
- Fabricated 9 designs and conducted 117 flying tests to develop a 550g, 1.2m wingspan fixed-wing aircraft that can be assembled in less than 90 seconds and carry 1500g of payload
- Developed CAD parts in Fusion360 and drafted CAD drawings of aircraft parts in AutoCAD that were sent for laser-cutting
- Finished 5th in the Society of Automotive Engineers (SAE) Aero Design East 2019 Collegiate Design Series hosted by Lockheed Martin in the micro-class category in Texas, USA

OTHER EXPERIENCE

Fast Food Worker

January 2022 - Present

Subway – Hamilton, ON

- Handle nearly 80+ customers every shift at peak hours and prepare bread, vegetables, and meat
- Manage the cash registry, maintain food inventory, and keep the store clean while ensuring all customers' orders are being prepared and served quickly

EXTRACURRICULAR ACTIVITIES

Senior subsystem member – SAE Student Project Team

May 2019 – November 2019

- Interviewed, selected, and supervised 1st-year undergraduate students and chose 20 competent members for the team out of 75 interested students
- Trained and oversaw 6 students in the structures subsystem working on designing and fabrication of unmanned aircraft components

Photographer – Cultural and Sports Fest

March 2019

- Photographed and post-processed over 100 photos of 4 events which were used in social media and advertisements of the festival