Kaarthic Pulogarajah 2A Mechanical Engineering

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SUMMARY OF QUALIFICATIONS

- Proficiency in **Matlab, SolidWorks, Creo Parametric, AutoCAD**, **GD&T**, and **drafting skills**
- Expertise in **C/C++**, **HTML**, **CSS**, and **Arduino** acquired through personal projects and extracurricular activities
- Exceptional **teamwork** and **problem solving skills**, obtained through projects and U of T design competition
- Strong **analytic skills** and consistent attention to detail, as shown through experimental lab courses
- **Quick learner** with ability to absorb and retain information, developed when tasked with building a wind tunnel

EXPERIENCE

Mechanical Designer | ESI Robotics and Automation | May 2017 – August 2017

- Performed FEM analysis of robot components and created a report outlining observations and recommendations
- Designed and 3D printed tensioning device to tighten timing belt system using Creo Parametric
- Devised system to secure batteries to robot with little interference to other components and easy replacement
- Assembled robots quickly and efficiently to meet deadline of delivering robots for a tradeshow

Math and Science Tutor | Educare Tutoring | October 2015 – June 2016

- Reinforced and improved middle school and high school students' understanding of core concepts in various subjects
- Developed strategies and schedules with each student to focus on long-term and short-term goals
- Gained professional communication experience by discussing strategies and plans with parents

RELEVANT PROJECTS

1315-MH Wind Tunnel | September 2015 – January 2016

- Designed frame of wind tunnel to hold force and wind speed sensors
- Co-authored a comprehensive proposal describing functionality, costs, and design of how to build wind tunnel
- Integrated differential pressure sensor with Arduino to measure wind speed inside tunnel
- Produced a mathematical model to relate sensor readings to true wind speed using experimental data

Planets Orbiting Simulation | July 2017 – August 2017

- Utilized Matlab to create accurate simulation of nine planets orbiting the sun
- Applied knowledge of parametric equations and rotation matrices to draw and rotate elliptical orbits
- Exhibited proficiency of Matlab code through the use of functions and efficient programming

Formula Motorsports | September 2016 – April 2017

- Designed chain guard on SolidWorks to be machined and used to protect chain on 2017 FSAE competition car
- Machined FSAE car components using lathe and ensured parts were within design specification
- Created engineering drawings for parts to be manufactured

Personal Website | September 2016 - Present

- Built website using HTML and CSS to showcase personal projects
- Displayed highlights of 3D modelling projects, including a water pump and a rocking horse
- Exhibited proficiency in C++ through projects such as Battleship and Mastermind games

AWARDS AND INTERESTS

- 3rd place in University of Toronto High School Design Competition (Rube Goldberg Machine) | 2014
- Black belt in Taekwondo | 2014 - Present
- Senior Editorial Writer at The Reckoner (newspaper) | 2012-2016