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| Souren Pashangpour  NEWMARKET, ON · 647-425-0952  Email: spashangpour@torontomu.ca  **EDUCATION** Mechatronics Engineering, Ryerson UniversitySeptember 2019 - Present  * Combined cumulative GPA of 3.9 as a third-year mechatronics engineering student.  High school Graduate, Richmond green secondary schoolJune 2019  * Honors all throughout highschool * CPR & First Aid Qualification |
| **EDUCATION** Mechatronics Engineering, Toronto Metropolitan UniversitySeptember 2019 - Present  * Combined cumulative GPA of 3.83 as a fourth-year mechatronics engineering student * Dean’s list throughout completed semesters |

### Experience

### September 2022- December 2022

### project manager, Toronto metropolitan university

* Organized weekly meetings with project groups once a week to discuss progress
* Guided project groups on starting points and next steps
* Managed conflicts between group members
* Provided marks and feedback on submitted content

### September 2022- Current

### workflow automation, startup, hybrid

* Programming scripts which optimized worker efficiency by automating repetitive computer tasks
* Creating apps which reduce employee errors in admin procedures
* Designing machine learning models to check for various conditions

### May 2022- September 2022

## Engineering intern, Honda Canada

* Designed the CAD (SolidWorks) model of 3D printable jigs to ease the assembly of parts and improve the ergonomics of the process
* Quality control inspections on the finished Honda civics
* Line work, assembling Honda civic engines
* Design of reaction bars for DC tools
* Assisting other production zones in case of low manpower

### January 2017 - September 2021

## Intern, IDES Canada

* Programmed the manufacturing robot (FANUC), to drill steel faceplates and electrical boxes on a batch production scale.
* Designed and manufactured the CAD (SolidWorks) model of assembly to attach a plasma cutter to the FANUC robot to automatize the plasma cutting process, cut costs, as well as improve overall product quality and safety.
* Prepared and organized the workspace for the safe and efficient operation of the manufacturing robot.
* Upgraded workstations regularly with new tools, apparatus, and testing stations.
* Collaborated with the engineers and other technicians to cut down manufacturing times, by producing stock.
* Overlooked the assembly for R&D projects, as well as testing and data acquisition for the projects.
* In charge of maintenance and repair of the 3D printers.
* Assisted in marketing and finding potential customers using the product knowledge gained through experience in the company.
* Assembled and machined products from start to finish based on their electrical and mechanical part drawings.
* Calibrated, tested and fixed products, using software such as H-term, and Arduino IDE.

### March 2022 – September 2022

## Research assistant, Toronto Metropolitan university

* Integrating leap motion trackers in python into the Arduino environment
* Researching creating objects in 3D engines
* Creating a wearable mechanism that includes haptics and hand tracking to play an instrument in virtual reality
* Helping with the control of the server motors in the mechanism
* Finding and extracting coordinates and velocity of tracked objects

**ORGANIZATIONS**

## Team Leader, Baja, Toronto Metropolitan university

* Designed the CAD (AutoDesk) model and implemented powertrain components onto Baja vehicle
* Managed team members and divided tasks to ensure optimal workflow
* Budget planning to prevent cost overrun
* Mechanical design to ensure parts operate efficiently

## The tutors, start-up

* Set up and operate company hierarchy
* Attract new clients using different forms of media
* Set up company platform via designing website
* Managed employees and scheduled in a timely manner
* Ensure curriculum is up to standards

**PROJECTS**

## High-rise evacuation using vtol lifT devices

### January 2023-current

* Utilizing aero gas-cooled engines to create individual VTOL units
* Created a hive-like central system to take control of individual VTOL units to stabilize payload
* Engine and load RPM vs torque analysis and in-lab testing to create and choose parts which lead to an efficient Powertrain system
* R&D development of a carrying system to evacuate high-rise residents
* CAD design and analysis of VTOL and carriage body

## Single Actuator Car

### November 2022

* Designed the mechanical model of a 4-wheel drive miniature car capable of going all four directions using one actuator and a gearbox.
* Created tolerance CAD (SolidWorks) parts to be 3D printer and assembled to ensure proper gear meshing.
* Programmed functions allow the car to move in the desired direction by controlling the singular DC motor.

**INVERTED PENDULUM SYSTEM**

### October 2022

* Designed (AutoDesk) the mechanical model of an inverted pendulum system with correct tolerancing for correct fitting parts. Low tolerances on parts and separated pieces allow for shorter fix time in case of breakdowns.
* Using approximations and careful setup of the system, applied a linear control system to a non-linear system.
* With the use of an Arduino used data from an IMU to stabilize the system, and report error values.

**Restoration of 1989 IROC-Z & 1967 TRIUMPH SPITFIRE (Ongoing)**

* Used diagnostic skills to repair parts
* Removed rust from the undercarriage of both vehicles
* Interior upgrades including flooring. radio system and horn (safety)
* Design of intake cover for spitfire
* Diagnosed malfunctions in the radiator fan circuit of spitfire
* Repair of the IROC’s trunk latch system and motor
* Comprehensive fluid changes for Spitfire
* In process of Engine swapping IROC to LS1

**OUTDOOR AMBIENT LIGHT THROUGHOUT THE DAY**

* Researching the change of luminosity vs time throughout the day
* Looking to discover how rapidly the apparent brightness of the environment changes relative to human vision in both Scotopic and Photopic ranges.
* Creating a self-reliant system to run for days on end without the need for external power to record needed data while also protecting from the weather conditions.
* Applying the statistical and technical analysis to recorded sensor data to arrive at a conclusion and estimate errors from operating conditions.

**MACHINE LEARNING MODELS**

* Created a machine-learning model to differentiate between ordinary objects by adding onto the pre-trained google CNN model
* Created a model to differentiate different types of failed 3D prints
* Coded a web scraping script to collect data from google images to help train model
* Working on implementing the 3D printing CNN to work in real-time

**WEB APPLICATION DEVELOPMENT**

* TheTutors.company
* souren. xyz (ongoing)
* <https://3.145.3.92/TTC/index.php> --- Smart Scheduler
* <http://18.222.138.181/calc/index.php> ---Robotics Matrix Calculator

**SKILLS**

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| * Team player who will help others when possible. * Attentive and quick learner * Creative Thinking * 3D Printing * R&D Testing * C Programming * Proficient in the Microsoft software * Mechanically inclined * Intermediate knowledge and Experience in sensors and circuits * SQL * HTML/CSS/Bootstrap * PHP & SHELL SCRIPT * Linux * OpenCV | * Can adapt to different work ethics * Efficient in SolidWorks * MATLAB * Project Management * Procedure Writing * Proficient in Fusion 360 * Diagnosing problems * Confident in using hand and power tools * Knowledge of Arduino programming * Python * JavaScript * Tensorflow,keras, pandas and other M.L libraries * R programming * AWS |