Atilla Saadat

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Education

M.A.Sc. - Aerospace Science & Engineering **Sept 2020 – expected Aug 2022**
University of Toronto *Toronto, Ontario, Canada*

B.A.Sc. - Honour's Mechanical Engineering w/ Aerospace Option **Sept 2015 - Aug 2020**
University of Windsor *Windsor, Ontario, Canada*

Industry Experience

Hardware Functional Safety Tools Engineering Intern **May 2022 – present**
NVIDIA Corporation *Santa Clara, CA*

- Developing software to automate and scale safety analysis for Failure Mode and Effects Analysis (FMEA), Failure Mode, Effects, and Diagnostic Analysis (FMEDA), and Fault Tree Analysis (FTA) on the world's most complex Systems on a Chip (Jetson AGX Orin), GPUs, and autonomous vehicle computers
- Acquired exposure to the functional safety engineering execution for autonomous vehicles at NVIDIA, following ISO 26262 Road Vehicles Functional Safety standards

Robotics Software Engineering Intern I & II **May 2017 – May 2018, Sept 2019 – Jan 2020**
Mujin Inc. *Tokyo, Japan*

- Developed a novel dynamics identification method for the Mujin Controller to calculate Friction, Center of Mass, and Inertia tensor coefficients. The results are used to improve the robot's torque model
- Validated experimental test results and developed production code for the feature, currently shipped on Mujin controllers for use by industry, improving robot performance during high accelerations by over 85%
- Collaborated with Mujin patent lawyers to submit 2 software patent applications, pending in USA [US Patent App. 20210347049, 20210347054], Japan, & China

Space Systems Engineering Intern (Lunar Exploration) **May 2016 – Sept 2016**
Canadensys Aerospace Corp. *Toronto, Ontario*

- Developed a remotely-controlled lunar rover prototype with various camera modules (3D, stereo camera, fisheye) and interactive software features, managing a budget of >$10k
- Designed the concept of the rover, with a successful build and test campaign
- Constructed a companion ground station GUI with vehicle controls and live camera feed

Technical Skills

Languages: Python, MATLAB, Java, C/C++, JavaScript, PHP, HTML/CSS, MySQL, PostgreSQL

Frameworks/Packages: Numpy, Scipy, Matplotlib, Scikit-learn, OpenCV, Node.js, TensorFlow, Keras, TSfresh, Hyperopt, Django

Developer Tools/APIs: Google Cloud Platform, AWS, Docker, Twilio, Wit.ai, DigitalOcean, MongoDB, VS Code, Eclipse, Android Studio, SublimeText

Technologies/Other: Linux, Windows, Mac OSX, Git, Bash, Raspi/Arduino/BBB, Office Suite, Latex

Projects

Undergraduate Machine Learning Researcher **Mar 2019 – Oct 2020**
Intelligent Control, Analysis, and Modeling (iCAM) Laboratory *University of Windsor*

- Researched and developed a novel ensemble-based machine learning (ML) algorithm for fault detection and isolation of fault states for reaction wheels on in-orbit satellites
- Determined optimal time-series machine learning classification techniques and feature-extraction methods from Scikit-learn, TensorFlow, and Keras, utilizing Hyperopt for ML hyperparameter optimization and cross-validation techniques