

## Professional Experiences

Software Engineer Intern— Johnson and Johnson (J&J)

Trenton, NJ, May 2023 - present

- Designed web-based dashboard using dash Plotly for real-time visualization of finances and budgets across various Therapeutic Areas, offering valuable insights into expenditures and project status.
- Created an Azure-based application to automate database integration and web app access to SharePoint, resulting in seamless data aggregation and visualization.
- Established ODBC connections to Teradata and Denodo data lakes for Johnson & Johnson, facilitating live data integration into web applications for real-time corporate data visualization.
- Developed various creative data visualizations and dashboard designs for J&J teams, leading to the establishment of an API for enhanced data accessibility.
- Gained hands-on experience in application development using git and bit-bucket space for seamless collaboration.

Machine Learning Engineer and Researcher — Stevens Institute of Technology

Hoboken, NJ, Aug 2019 - present

- Design of a labeling assistant [dashboard](#) for database creation and assessment for Machine Learning related projects with MATLAB, resulting in a 10x efficiency increase and manual labor reduction.
- Design and development of a deep learning model for melt pool image processing using customized TensorFlow models, resulting in a significant data processing time reduction from 120s to <1s.
- Implementation of Machine Learning methods for feature extraction, from various data sources such as point clouds and images using [Hybrid Convolutional Auto Encoder-Decoders](#), resulting in an autonomous anomaly identification and prevention system.
- Implementation of a Reinforcement Learning-based controller, to automate anomaly detection and error mitigation using advanced deep learning techniques in TensorFlow, resulting in real-time fault detection and parameter tuning. (Patent in progress)
- Carrying out a multi-language (Python, MATLAB, C#) command exchange to automate data and command exchange streamline to sync various APIs.
- Gained proficient hands-on experience with various sensors and data acquisition modules such as cameras and laser surface profilometers.

Software and Hardware Developer — Sharif University of Technology

Tehran, Iran, Aug 2018 - Jan 2019

- Designed and implemented an auto-irrigation system in Arduino, resulting in an \$8,000 funding raise and a start-up foundation.
- Providing technical support to employees regarding software design, model fabrication, testing, and documentation.
- Developed an auto-grading application to automate homework grading in various domains in MATLAB UI, resulting in a start-up foundation.

Virtual Reality Programmer and Research Intern — Dr. Robot

Tehran, Iran, Jan 2018 - Aug 2018

- Supervised and implemented the Virtual Reality (VR) equipment and synchronization of the auxiliary sensors and devices.
- Designed and developed 10 interactive VR-based software programs in Unity engine, to train and examine pronunciation skills for children aged 7-10.
- Proctored 10 in-field software tests with VR equipment and developed applications with 58 subjects, leading to a successful proof of concept.
- Established assorted libraries for automation and task creation, including Text-To-Speech (TTS) conversion, animation creation, scenario compilation, and Console-VR program Synchronization in C#/Java/Python.

## Education

Graduate Certificate in Machine Learning |Stevens Institute of Technology, NJ, USA

Aug 2021 – Dec 2022

Doctor of Philosophy (Ph.D.) in ME |working on Artificial Intelligence & Robotics, Stevens, NJ, USA

Aug 2019 – May 2024

Master of Engineering (M.Eng.) in ME | Focusing on Robotics & Control, Stevens, NJ, USA

Aug 2019 – May 2021

## Technical Skills

- Proficient in Python, with advanced work experience
- Proficient in TensorFlow, with advanced work experience
- Proficient in MATLAB and Simulink, with advanced work experience
- Intermediate experience in with SQL
- Intermediate experience in C++/C#
- Familiar with Unity and Steam Virtual Reality
- Intermediate experience Web-App development using Dash Plotly

## Certifications

Fundamentals of Reinforcement Learning,  
HSE (Health, Safety, and Environment),  
Custom Models, Layers, and Loss Functions with TensorFlow

University of Alberta  
Isfahan Oil Refinery Company  
DeepLearning.AI

## Selected Publications

Real-Time Monitoring and Gaussian Process-Based Estimation of The Melt Pool Profile in DED.	ASME-MSEC 2023
A Deep Learning Solution for Real-time Quality Assess & Control in AM Using Point Cloud Data.	JIMS 2023
In-Situ Process Monitoring and In-Plane Anomaly Identification for A.M. Using P. Cloud and ML.	ASME- IDETC&CI 2021
Sensory Data Fusion Using Machine Learning Methods for In-Situ Defect Registration in AM: A Review.	IEMTRONICS 2022
Image-Based Dataset of Artifact Surfaces Fabricated by Additive Manufacturing with Applications in ML.	Data in Brief 2022