

MICHAEL TEREKHOV

MECHANICAL ENGINEERING AT BOSTON UNIVERSITY
CONCENTRATION : MACHINE LEARNING

✉ terekhov@bu.edu
in www.linkedin.com/in/miketerekhov
☎ 774-345-0424

EDUCATION

BOSTON UNIVERSITY

B.S. in Mechanical Engineering with
a Concentration in Machine
Learning

Sep 2019 - May 2023

- 3.55 / 4.00 GPA

SKILLS

Programming

- **Python** - OOP & used for designing and implementing machine learning models
 - **TensorFlow** & **PyTorch**
- **C & C++** - learned the basics of computer architecture and programming languages. OOP in C++ and building larger-scale applications
- **MATLAB** - utilized for linear algebra calculations & signal analysis
- **SQL** and **Mongo DB** - backend implementations to store user data.

CAD

- **SolidWorks** and **NX** - used in many projects that employed GD & T principles
- **AutoCAD** - created sketches that were used for laser cutting

Manufacturing

- familiar with **mills**, **lathes**, **ECM machines**, **peening methods**, **injections molders**, **CMMs**, and **balance check machines** along with their respective uses in a manufacturing shop
- utilized **3D printers** and **laser cutters** for rapid prototyping and creation of final designs

Simulation/Analysis

- SolidWorks and NX **finite element analysis** for projects to illustrate forces and end conditions implemented varying **mesh** configurations for testing

EXPERIENCE / PROJECTS

General Electric Aviation | Quality Engineering Intern | Hooksett, NH

June - August 2022

- Worked with **design** and **manufacturing** engineers to conduct priority part reviews, which included a full breakdown of part drawings and the corresponding manufacturing techniques used in the shop
- designed a fully digitized "heat-map" for a part that displayed types of defects and their locations
- developed a fully functioning **Python** program that would intake and store user-entered data and output images with the corresponding defects that were entered
- utilized **LEAN manufacturing** principles by performing **root cause analysis** in the shop and improving workflow
- employed **GD & T** principles in assessing part designs

Self-Driving Cart | Software | Project

November 2022

- Designed and developed a convolutional neural network using the **PyTorch** package in Python that would teach a cart to complete tracks.
- Experimented with varying network architectures, activation functions, and training techniques.
- Implemented **Q-Learning** algorithm to create a cart controller that utilized state-action pairs and varying rewards for different actions.
- Improved our algorithm by implementing **double Q-Learning**, which included two agents involved in the decision-making process.
- Observed the exploration vs exploitation dilemma

Goose Classifier | Software | Project

October 2022

- Led a team that worked on creating a goose-repelling drone that would identify geese in a set area and chase them away.
- Constructed a convolutional neural network (CNN) using **TensorFlow** in Python that would analyze images and determine whether or not there was a goose in the image.
- Assembled a data set that would allow the classifier to properly identify any number of geese in an image and distinguish between other objects and animals
- Trained and tested CNN with varying network architectures and attributes

Soft Octopus Robot | Propulsion System | Research

March 2022

- Designed and built a prototype of a propulsion system that employed the basics of momentum conservation to mimic the movement of cephalopods
- Created molds out of silicone and utilized **centripetal epoxy mixers** and **vacuum chambers** to ensure good mold quality
- Utilized **Solidworks** and **AutoCAD** to design parts that were then **laser cut** and **3D printed**
- Analyzed fluid flow through the mechanism using **COMSOL**

EXTRACURRICULARS

- BU Club Ice Hockey
- Marathon Runner