

# Nathan Israel Luskey

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## EDUCATION

**Carnegie Mellon University (CMU)** School of Computer Science

**Pittsburgh, PA**

M.S. Computer Science (MSCS)

May 2023

- Coursework: Deep Learning, Machine Learning, ML in Production, ML with Large Datasets, Visual Learning and Recognition, Computational Medicine, Statistics, Distributed Systems, Algorithms

**Georgia Institute of Technology (GT)**

**Atlanta, GA**

B.S. Biomedical Engineering GPA: 3.92/4.0

December 2020

- Minors: Computer Science & Industrial Design
- Stamps President's Scholar (Georgia Tech's top merit-based scholarship)
- Coursework: Systems & Cellular Physiology, Cell Culturing, Intro to AI, Human Factors, Human-Computer Interaction, Object Oriented Programming, Data Structures, Algorithms, Database Management, Mechatronics, Biomedical Engineering Design

## INDUSTRY EXPERIENCE

**Optum Healthcare**

**Pittsburgh, PA**

Technology Development Intern in Intelligent Disease Prediction

June - September 2022

- Augmented Recurrent Neural Network (RNN) PyTorch Lightning model for rare disease prediction with Transformer Encoder layers in embedding and focal loss for unbalanced training sets to improve precision by 25%
- Incorporated Ray Tune and TensorBoard libraries for large scale hyperparameter tuning with an ASHA Scheduler

**Olive Diagnostics**

**Modi'in, Israel**

Part-time Software Development Intern

February - August 2021

- Produced Docker images and Anaconda environments for Python microservices on IBM Cloud Code Engine
- Wireframed an entity relationship diagram (ERD) and deployed a MongoDB database with a Python wrapper class for managing MVPs' raw data and different models' predictions

**Ethicon Endo-Surgery**

**Cincinnati, OH**

Design Co-op in Front End Energy, Lifecycle Open Mechanical Products

May - August 2019, August - December 2018

- Supported implementation of temperature control algorithm to prevent harmonic scalpel overheating in bariatric surgery
- Streamlined data processing pipeline by consolidating methodologies and documentation through a MATLAB script
- Improved linear surgical staplers' usability by quantifying performance and qualified new testing fixtures

## RESEARCH EXPERIENCE

**Georgia Tech Healthcare Robotics Lab, Dr. Charles Kemp**

**Atlanta, GA**

Undergraduate Research Assistant

May - December 2017

- Set up 1-Degree-of-Freedom robot to automate data collection on flat samples for training an SVM
- Coauthored "Classification of Household Materials via Spectroscopy" in IEEE Robotics and Automation Letters in January '19

## ACADEMIC PROJECTS

**Natural Language Processing Word Embeddings for Financial Documents**

**CMU** Spring 2022

- Tuned several word embedding algorithms on SEC data culminating in tuning BERT to improve accuracy from 71% to 80%

**Song Classification for Running Playlists**

**GT** Summer 2020

- Developed both k-means clustering and decision tree with pruning to optimize models for classifying songs

**Intraoral Dental X-Ray**

**GT BME Capstone** Spring 2020

- Followed FDA waterfall to observe and interview doctors, prototype product, and evaluate doctor's satisfaction

## LEADERSHIP

**Member, CMU SCS Masters Advisory Committee**

March 2022 - Present

**Project Coordinator, Projects Director, and VP of Corporate, Tech Beautification Day**

January 2017 - April 2020

## SKILLS

**Languages:** Python, Java, Go, MATLAB, SQL, C/C++, HTML/CSS/JavaScript

**Packages:** PyTorch, PyTorch Lightning, TensorFlow, PySpark, NumPy, pandas, scikit-learn, Matplotlib

**Software:** Databricks, Docker, MongoDB, MySQL, Anaconda, Solidworks, HSMWorks, Visual Studio Code, AWS, Google Colab

**Equipment:** CNC mill, laser cutter, 3D printer, axial & linear load machines, myDAQ, TI MSP430 microcontroller