# 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, Statistics, Machine Learning, ML with Large Datasets, 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 Deep Learning (DL) 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 May - August 2019

- 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

Design Co-op in Lifecycle Open Mechanical Products August - December 2018

## 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

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