# DENNIS LOEVLIE

1618 Roland Street #1, Pittsburgh, PA 15203 | dloevlie@andrew.cmu.edu | 724-841-8769
LinkedIn: www.linkedin.com/in/dennisloevlie/ | GitHub: www.github.com/loevlie/

## *SKILLS*

Machine Learning, Deep Learning, Time Series Analysis, Computer Vision, Natural Language Processing, Frame Level Classification of Speech, Git/GitHub, Python, PyTorch, TensorFlow, NumPy, SciPy, Pandas, Matplotlib, Scikit-learn, OpenCV, Amazon Web Services, Emacs, Microsoft Office (Excel, Word, Powerpoint), MATLAB, Visual Basic, Researching Skills, Professional Writing, Leadership

## *EDUCATION*

**West Virginia University, May 2019**
Bachelor of Science in Chemical Engineering, Cum Laude
**Carnegie Mellon University, Expected Graduation Date: December 2020**
Master of Science in Chemical Engineering, GPA: 3.84

## *PROJECTS*

**Carnegie Mellon University Introduction to Deep Learning Course (currently enrolled Fall 2020)**

- Frame Level Classification of Speech - Built a DNN in PyTorch to classify 346 phonemes in different “mel-spectrograms”
- End to End Face Verification System - Built a CNN in PyTorch based on the Google-Net architecture to produce face embeddings for facial verification
- Deep Learning Transcript Generation - Built a RNN in PyTorch with unaligned training labels to generate transcripts from a series of utterances
- Disparity map generation - Replicated and modified a state-of-the-art model from the literature in PyTorch to generate disparity maps for 3D stereo images

**Pitt Challenge Hackathon - Healthcare Patient Stay Duration Predictor**

- Used PyTorch to build a DNN classifier to predict the stay duration of a patient based on general parameters about the hospital and the severity of the illness
- Developed a GUI to allow the user to easily access model predictions in real time
- 1$^{st}$ place in the “Largest Impact on Healthcare Workers” category

**Hack the Northeast Competition - American Sign Language (ASL) Active Learning GUI**

- Used YOLO hand detection and a CNN built with TensorFlow and Keras to classify whether the user correctly signed a letter in ASL in real time
- Developed a GUI where the user could pick a letter or randomly be assigned a letter to practice

**Covestro Data Science Hackathon - Rhine River Water Level Prediction**

- Used Vectorized Auto-Regression (VAR) to predict the water level in the Rhine river based on historical data

## *RESEARCH EXPERIENCE*

**Carnegie Mellon University Department of Chemical Engineering with Dr. John Kitchin - December 2019 to Present**

- Recreated image analysis tools in Python (originally in Mathmatica) to be faster and more intuitive
- Developed a Python package, *nb_search*, to efficiently sort through, locate and open Jupyter Notebook files
- Regressed parameters and used them for clustering of different bimetallic catalysts

## *RESEARCH EXPERIENCE continued*

**West Virginia University Department of Chemical and Biomedical Engineering with Dr. Fernando Lima – April 2017 to August 2019**

- Modeled, optimized and researched the integration feasibility of ion transport membranes as an alternative to cryogenic air separation for high temperature chemical processes in MATLAB/Aspen Plus funded by the National Science Foundation

**Modeling and Optimization of Plastic Solid Waste Pyrolysis for the Production of PHB Biodegradable Plastics – Senior Design Capstone – September 2018 to April 2019**

- Selected to lead a team of four peers
- Connected Aspen Plus and MATLAB via COM server and utilized a genetic algorithm to conduct a multi-objective optimization focused on improving the economics and sustainability of the process

## *HONORS/AWARDS/ACTIVITIES*

**Carnegie Mellon University, Fall 2019—Fall 2020**

- Third place in the Chemical Engineering Graduate Student Organization Masters student research symposium November 2020

**West Virginia University, Fall 2016—Spring 2019**

- Omega Chi Epsilon Chemical Engineering Honor Society, Spring 2018 – Spring 2019
- Vice President of the American Institute of Chemical Engineers (AIChE), Fall 2018 – Spring 2019
- WVU Honors College, 2016-2019
- Second place in the Computing and Process Control Division at the national 2018 AIChE poster presentations
- First place for AVEVA's National Simulation Competition (Advanced Category) April 2019

**La Roche College, Fall 2015—Spring 2016**

- CheM (Chemistry and Math) Scholars Fall 2015 - Spring 2016
- Member of La Roche men's soccer team Fall 2015 - Spring 2016