JASON LANG

13683 Taylorstown Rd. Leesburg, VA 20176 | (571) 242-0085 | jdenalil@vt.edu | www.linkedin.com/in/jason-d-lang

EDUCATION

VIRGINIA TECH | CLASS OF 2021 | 3.36 GPA | BS MECHANICAL ENGINEERING

VT ML/STAT Coursework: Artificial Intelligence, Python Programming, Statistics, Linear Algebra

VT ME Coursework: System Dynamics, Fluid Mechanics, Thermodynamics, Heat Transfer, Electrical Theory, Mechanical Design, Industrial Electronics, Dynamic System Vibrations

Online Coursework: Machine Learning (Stanford), Reinforcement Learning (UCL/Deepmind)

WORK EXPIRIENCE

DEEP LEARNING INTERN | HERON SYSTEMS R&D **DEC. 2019 – JAN. 2020**

- Adapted a state-of-the-art natural language processing transformer architecture to train reinforcement learning agents for DARPA's AI Dogfight Trials
- Developed 2 new reward shaping schemes that decreased agent training time by 33%
- Trained a real-time win probability classifier that predicted match result with 90% accuracy

RESEARCH AIDE | ARGONNE NATIONAL LAB **MAY 2019 – AUG. 2019**

- Created a Python application for real-time visualization and interpretation of 10,000 Spectroscopy data points per minute
- Created a dynamic temperature control system that operated from 100-800 Kelvin and allowed manipulation of sample angle and gas flow during operation
- Designed and built an electronic control system for collecting spectroscopy data remotely
- Build a remotely operated camera positioning slide used for focusing of the incident x-ray beam

RESEARCHER | MICROELECTROMECHANICAL SYSTEMS LAB **AUG. 2019 – DEC. 2019**

- Implementing additive manufacturing for design of modular microfluidic device housings
- Creating a novel housing design that integrates fluidic and electrical connectors to decrease heat loss and increase reusability

SNOWBOARDING INSTRUCTOR | WHITETAIL RESORT **DEC. 2013 – MAY. 2019**

- Taught snowboarding to large groups by adapting lessons to the needs of each student

PROJECTS

OPEN SOURCE DEVELOPER | GITHUB **JAN. 2020 – PRESENT**

- Developed, released, and maintained the first open source implementation of the transformer network proposed in "Stabilizing Transformers for Reinforcement Learning", Parisotto et al. (2019)
- Code can be found at *www.github.com/jdenalil/Gated-Transformer-XL*

TRAJECTORY & ANALYSIS | VT ORBITAL LAUNCH VECHICLE TEAM **SEP. 2019 – PRESENT**

- Build a physics simulation software using MATLAB to model trajectory and validated it within 2% of the state-of-the-art rocket trajectory simulator RAS aero ii
- Use CFD software Star-CCM+ to model drag forces on the rocket throughout flight

SOFTWARE PROFICIENCIES

PROGRAMMING TOOLS: Python, MATLAB, Linux terminal

CAD TOOLS: Autodesk Inventor, PTC Creo, LT Spice

MACHINE LEARNING: PyTorch, RL frameworks