Eric Wallace

536 Raymond Drive, West Chester, PA 19380 ◆ ewallac2@umd.edu ◆ (484)-844-0776
ericswallace.com ◆ Eric-Wallace ◆ ericswallace

EDUCATION

University of Maryland, College Park — A. James Clark School of Engineering **GPA:** 3.95/4.00
B.S. Computer Engineering Expected Graduation: Dec 2018
Entrepreneurship and Innovation Honors Program (EIP)

RELEVANT WORK EXPERIENCE

Lyft — *Autonomous Driving Intern* Palo Alto, CA
- Developing Deep Learning models for Computer Vision tasks on Lyft's Self Driving Car Team *June 2018- Aug 2018*
- Training state of the art CNN models for Image Segmentation, Object Detection, and Human Pose Estimation

Intel Corporation — *Software Engineering Intern (Co-op)* Folsom, CA
- Designed Arithmetic Logic Units (ALUs) for use in the i-7/i-9 10nm microarchitecture *Aug 2017- Dec 2017*
- Improved high level synthesis compiler that converts C directly to Verilog for use in ASIC hardware design
- Developed internal tool flow for pre-silicon static power checking for System on A Chip (SOC) and ASIC designs

Appian Corporation — *Software Engineering Intern* Reston, VA
- Implemented ResNet-50 model pretrained on ImageNet for internal image recognition system *May 2017-Aug 2017*
- Prototyped functionality for sentiment analysis, NER, and topic modeling using Stanford CoreNLP and NLTK
- Modified database query handler to allow for dynamic batching of data based on available JVM resources

Textron Systems: Unmanned Systems (UAV) — *Computer Engineering Intern* Baltimore, MD
- Developed low-level C firmware for embedded Microchip PIC32 processor on the Aerosonde UAV *June 2016- Aug 2016*
- Added voltage/current monitoring IC's and created driver software using peripheral busses (CAN Bus, SPI, I2C)

RESEARCH EXPERIENCE

University of Maryland: CLIP Lab — *Undergraduate Research Assistant* College Park, MD
Topic: Deep Learning for NLP, **Advisor**: Dr. Jordan Boyd-Graber *Jan 2018-Pres.*
- Focus on the intersection between Deep Learning and NLP, solving problems in Translation and Question Answering
- Work to make models more robust to adversarial examples, noisy users, and out-of-domain inputs
- Develop training techniques using Domain Adaption, Adversarial Training, and schemes for Data Augmentation
- Built user interface and gathered crowd sourced data to investigate linguistic phenomenon of NLP models

University of Maryland: Gessow Rotorcraft Center — *Undergraduate Research Assistant* College Park, MD
Topic: CUDA/GPGPU Acceleration**, Advisors:** Dr. Ananth Sridharan, Dr. Inderjit Chopra *Oct 2016-Dec 2017*
- Achieved state of the art runtimes for helicopter airflow simulations using GPU/CUDA acceleration [Publications]
- Utilized NVIDIA CUDA, OpenMP, OpenACC, and other SIMD/Parallel acceleration libraries (cuBLAS, Thrust)

SELECTED PROJECTS

DeepMind/Blizzard StarCraft A3C Reinforcement Learning Agent *Aug 2017*
- Implemented reinforcement learning agent in Tensorflow using Google DeepMind's python API for playing StarCraft
- Recreated DeepMind's results using policy gradient method (A3C) using ConvNet + LSTM for policy/value network
- Improved open source API by allowing multiple agents to modify global network parameters during distributed training

Motion Planning – ENEE 324: Professor G. Blankenship [Paper] *Nov 2016*
- Developed MATLAB simulator for groups of autonomous cars tasked with communication and organization
- Incorporated physics/dynamics model based on vector state space equations for Dubin's Car
- Integrated path tracking navigation algorithm using a pure pursuit method with adaptive look-ahead distance

TECHNICAL SKILLS & INTERESTS

Software: Java, Python, C, MATLAB **General:** Git, Linux, AWS, Agile Workflow, Jira, Trello
Frameworks: CUDA, PyTorch, Scikit-Learn, Tensorflow
Open Source Involvement: PyTorch, TorchText, OpenAI Gym, PySC2
Campus Involvement: Machine Learning @ Maryland, Startup Shell, Entrepreneurship Subgroup
Interests: Machine Learning, Natural Language Processing, Reinforcement Learning, Deep Learning