Luke Thistlethwaite

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Education

The University of Texas at Austin — Austin, TX
Bachelor of Science in Computer Science, Turing Scholars Honors Program — *Aug 2021 – May 2024*
Coursework: Honors Data Structures, Honors Discrete Math, Probability & Statistics

Thomas Jefferson High School for Science and Technology — Alexandria, VA
Advanced Studies Diploma, Computer Systems Research — *Aug 2017 – Jun 2021*
Coursework: Artificial Intelligence, Machine Learning, Computer Vision, Parallel Computing, Multivariable Calculus, Linear Algebra

Experience

Data Machines Corp. — Ashburn, VA

Software Development Engineering Intern — *June 2021 – Aug 2021*

- Worked on DARPA's ASED program, an advanced R&D project focused on defending against and responding to social engineering attacks.
- Trained GPT-2 language model on spam text messages using Python and HuggingFace transformers and leveraged Twilio's SMS API to simulate phishing-related text messages.
- Implemented database storage with Firebase and Mozilla's Kinto for an API that manages model evaluation.

Software Development Engineering Intern — *June 2020 – Aug 2020*

- Collaborated with machine learning researchers on DARPA's Learning with Less Labels program (LwLL) to research methods to reduce training data for ML models.
- Utilized Docker and Kubernetes to write infrastructure responsible for containerizing and deploying machine learning models across server clusters.
- Wrote a web server with React.js and Flask that is used by several research institutes to submit specifications about machine learning models.

Projects

GANimate, researched the applications of Conditional Generative Adversarial Networks (cGANs) in the field of future video prediction. Wrote and trained a cGAN to take frames of a comic as input and produce coherent animation as output (Python & PyTorch).

PaperFind, implemented dlib shape predictors to recognize vertices of sheets of paper in images, then apply transformations and optical character recognition to extract text (Python & OpenCV).

Activities

ISSS (Infosec club), writing problems and participating in cybersecurity contests.

UTPC (Competitive programming club), participating in weekly contests to improve programming techniques.

TJ CV Club, Co-captain (2020-21), Teaching Coordinator (2019-20), organizing and leading club meetings that discuss technologies and algorithms in the field of computer vision.

TJ Computer Security Club, Lecturer (2020-21), lecturing on cybersecurity topics (mainly binary exploitation).

TJ Golf Team, played and competed on TJ's varsity men's golf team.

Awards

CSAW RED, 2020 Finals, placed 8th high school team in US–Canada Region (5th in qualifiers).

CMU's PicoCTF 2019, placed 41st out of 5100 competitiors in cybersecurity capture-the-flag contest.

USACO Gold Division, achieved in 2019 US Open.

Programming Skills

Languages: Java (6 years), Python (5 years), JavaScript, C, C++, HTML, CSS

Skills: Software Engineering, Computer Vision, Containerization

Technologies: PyTorch, Tensorflow, Docker, Kubernetes, Git, React.js, OpenCV