William Alexander Knipe [GitHub](#)

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https://github.com/WhimsicalWill

WORK EXPERIENCE

Software Engineer Intern at the Software Engineering Institute | Pittsburgh, PA   2022
Developed and deployed automated integration and accessibility tests for
frontend with Cypress and JS. Configured Google Lighthouse to measure
site performance after new code deployments with CI/CD.

Assistant Researcher at the Batman Lab | Pittsburgh, PA   2021
Wrote PyTorch code to produce visualizations and metrics for deep
computer vision models that detected cancerous tissue in slide images.

Software Developer Intern at Lockheed Martin | King of Prussia, PA   2020
Worked as a Software Development intern in a team to develop and
deploy collaborative coding workspaces using Docker and Kubernetes.

Software Developer Intern at Kognition, LLC | Philadelphia, PA   2019
Developed an algorithm in Python to track unique people in real time using
optical flow, allowing for a more efficient facial recognition model.

EDUCATION

University of Pittsburgh | B.S. in Computer Science & B.S. in Mathematics (2023)
- GPA: 3.96/4.0
- Honors College

RELEVANT COURSEWORK

Computer Science and Mathematics
Machine Learning, Graduate Deep Reinforcement Learning and Control, Probability, Calculus I, II, & III, Data
Structures and Algorithms I & II, Algorithm Design, Graduate Numerical Methods

RESEARCH/PROJECTS

AccessibleRL | https://github.com/WhimsicalWill/AccessibleRL   2022
PyTorch implementation details of 8 fundamental Deep Reinforcement Learning algorithms with
detailed explanations and utilities for easily running experiments, plotting data, and saving models.

Automated detection of premalignant oral lesions using CNNs | Acknowledged in Oral Oncology paper   2021
Created a Python workflow using PyTorch and scikit-learn to compare predicted segmentations to
a validation set of ground truth annotations by clinical experts, allowing researchers to quickly compare
different models based on metrics like sensitivity and accuracy in less than 10 minutes.

OpenDance | https://github.com/MyYogurt/OpenDance   2021
Open-source dancing game built on top of the CMU OpenPose model that scores players in real time with
a pose-matching algorithm to measure how well they match a selected dancing video from the internet.

Modeling the Dispersion of the Spotted Lanternfly | Best-in-show Chester County Science Fair   2018
Modeled and predicted the spread of an invasive insect threatening agriculture in the
Mid-Atlantic region using machine learning and statistical methods.

SERVICE

UMathIA Teaching Assistant   2019
Organized and taught lessons for UMathIA, a math camp for ~20 middle school kids focusing on problem
solving, coding, and high school math.

Charles A. Melton Youth Center Volunteer   2018
Led science and coding lessons for underprivileged K-8 kids while also helping to manage camp activities

SKILLS

Python, Java, C, JavaScript, React | ML/DL/AI | PyTorch, TensorFlow | Agile | Linux | Git | Cloud | CI/CD