

# STANLEY WU

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## EDUCATION

**Northeastern University** | Boston, MA

Sept. 2019 - Exp. May. 2023

BS in Computer Science with concentration in Artificial Intelligence

GPA: 3.9/4.0

*Related Coursework:* Special Topics in Machine Learning Security and Privacy, Graduate Level Unsupervised Machine Learning, Supervised Machine Learning and Data Mining, Artificial Intelligence, Algorithms and Data Structures, Object Oriented Design, Database Design, Group Theory, Probability and Statistics, Linear Algebra, Multivariable Calculus

## SKILLS

Programming Languages: Python, Java, Typescript, SQL, C, LaTeX

Computer Knowledge: PyTorch, Tensorflow, OpenAI, HuggingFace, Sklearn, React, Flower, SciPy, AWS, PySpark, Django, Docker, Snowflake

## WORK EXPERIENCE

**Khoury College of Computer Science** | Boston, MA | [arXiv](#)

Oct. 2020 - Present

*Machine Learning Research Assistant*

- Published a machine learning paper that presents our findings on combining membership inference attacks on multiple ML model update, focusing on how updates can give an adversary increased knowledge of an ML model's training
- Designed and fine-tuned ML models using Tensorflow, PyTorch, and BERT to run membership inference threshold attacks on common digits, image, and textual datasets

**Klaviyo** | Boston, MA

May 2022 - Aug. 2022

*Data Science Intern*

- Trained multiple text-based language generation models for customized email subject lines using GPT-3/BERT, and proposed a data streaming pipeline supported by customers that would allow users to generate unique copy-writing based on past data
- Ran customized experiments using Snowflake data to identify potential areas of automating text analysis using t-SNE and UMAP
- Conducted meetings with customers and customer success managers to understand pain points in the current email subject line generator and pinpoint areas of improvement

**MORSE Corp** | Cambridge, MA

Aug. 2021 - Dec. 2021

*Python Software Engineer Co-op*

- Analyzed the robustness of an image anomaly detection algorithms using Pyspark, Scipy, and OpenCV while improving algorithm speed by 50%, and decreasing memory consumption
- Integrated unsupervised machine learning algorithms such as Density-based Clustering and Hierarchical Clustering with anomaly detection and testing for improved spacial filtering on non-circular clusters

**Proofpoint** | Durham, NC

May 2021 - Aug. 2021

*Data Science Intern*

- Implemented an AWS pipeline using a PyTorch based encoder and a classifier that allows threat researchers to catch suspicious webpage screenshots and mark them as phishing attempts
- Presented to stakeholders the learning capability of deep neural networks, pretrained image nets, boosting/ensemble algorithms, and nearest neighbor classifiers on phishing image identification

## PERSONAL PROJECTS

**Federated Autoencoders** | *Autoencoders, Federated Learning, Python* | [GitHub](#)

Apr. 2022

- Experimented with federated learning on variational autoencoders with disjoint sampled datasets and evaluated their effectiveness in producing a joined autoencoder that performs well on the combined joined dataset
- Discovered that while federated learning allows for increased learning privacy and improved latency, the combined model is slightly degraded with higher sensitivity to outlier images

**COVID-19 Crowd Counting** | *Computer Vision, PyTorch, Python* | [GitHub](#)

Apr. 2021

- Explored density/heat map generation of images with crowds using pretrained image nets and evaluated the effectiveness of the generated density map for estimations of crowd size