

Reagan Kan
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Education

MS in Computer Science, Georgia Institute of Technology, Atlanta, GA
BS in Computer Science, Georgia Institute of Technology, Atlanta, GA

Expected – December 2021
GPA 3.92 / 4.00

Work Experience

➤ Georgia Tech and Georgia Tech Research Institute

[Fall 2020] Student Research Assistant: Adversarial Machine Learning

- Implemented the Integrated Gradients attribution method
- Selected features with robustness against adversarial attacks for PDF malware detectors
- Wrote Angular unit-tests for the application user interface

[Summer 2020] Research Intern: Adversarial Machine Learning

- Studied adversarial attacks and defenses in image & malware domains
- Leveraged the PeePDF tool to automate the Reverse Mimicry Attack on PDF malware detectors
- Tested the effectiveness of the Reverse Mimicry Attack on TensorFlow PDF malware classifiers

[Spring 2020] Undergraduate Teaching Assistant: CS 2050 Intro Discrete Math

- Graded assignments and exams, held weekly office hours, co-taught weekly recitation section

[Fall 2019] Machine Learning Student Research Assistant: EMADE

- Researched genetic automated machine learning (autoML)
- Integrated new evolvable computer vision tracking algorithms into EMADE, an autoML framework

[Summer 2019] Research Intern: EMADE

- Determined the plausibility of integrating a co-evolutionary approach in EMADE
- Designed a test bed that runs genetic programming processes to simulate EMADE's behavior
- Wrote python scripts for generating plots and visualizations of the data collected from experiments

[Spring 2019] College of Computing Tutor: Discrete Math and Object Oriented Programming in Java

- Tutored students in one-on-one appointments

Projects

➤ [Fall 2020] Data & Visual Analytics Final Project

- Trained classifier for predicting the tumor type of Neurofibromatosis patients
- Identified drug targets for the most highly expressed genes in Neurofibromatosis patients
- Visualized gene/tumor correlations in an interactive heatmap

➤ [Fall 2020] Computer Vision Projects

- Hybrid Images: used image filtering to make images that change appearance at near/far viewpoints
- Image Classification: compared neural network classifiers, three convolutional networks and a fine-tuned AlexNet, with a 15-class dataset
- Local Feature Matching: found correspondences between two images of the same scene using a neural network that incorporates the Harris corner detector and a simplified SIFT
- RANSAC: implemented RANSAC to estimate the fundamental matrix of image pairs

➤ [Spring 2019 – Spring 2020] Junior Design Project

- NLP sub-team of the Automated Algorithm Design Team, which works to expand EMADE
- Added stemming and lemmatization primitives
- Implemented architecture for multilabel classification with neural networks

➤ [Spring 2020] Deep Learning Final Project:

- Compared various methods for link prediction on YouTube dataset
- Added spectral embedding to SEAL framework, which uses Graph Neural Networks

➤ [Fall 2019] Machine Learning Final Project:

- Compared classification techniques, including regression, random forests, and neural networks
- Evaluation based on performance on Crowdsourced Mapping Data Set

➤ [Summer 2019] Sudoku:

- Web based Sudoku game written with Javascript

➤ [Spring 2019] Computer Organization & Programming Project, 2048 Game:

- Single player puzzle game designed using C for the Game Boy Advance

- **[Spring 2019] Objects and Design Final Project, Risk Game:**
 - Multiplayer board game written in Scala with a team of four.

Programming Languages

Python(Tensorflow, PyTorch, PySpark), Java, Javascript (D3.js, React), HTML/CSS, C/C++, Scala

Relevant Courses

➤ **In Progress**

Game AI, Interactive Robot Learning, Mobile Manipulation, Web Search & Text Mining

➤ **Completed**

Computer Vision, Data & Visual Analytics, Deep Learning, Intro to AI, Intro to Grad Algorithms, Intro Perception & Robotics, Machine Learning, Object Oriented Programming in Java