

Reagan Kan
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Education

MS in Computer Science, Georgia Institute of Technology, Atlanta, GA	January 2021 – December 2021
BS in Computer Science, Georgia Institute of Technology, Atlanta, GA	GPA 3.92 / 4.00

Work Experience

➤ Georgia Tech and Georgia Tech Research Institute

[Fall 2020] Student Research Assistant: Adversarial Machine Learning

- Implement the Integrated Gradients attribution method.
- Select features with robustness against adversarial attacks for PDF malware detectors.
- Write 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.

- Began efforts to determine the plausibility of integrating a co-evolutionary approach in EMADE.
- Designed a test bed that runs genetic programming processes that mimic 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:

- A recreation of the single player puzzle game. Designed using C for the Game Boy Advance.
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➤ **[Spring 2019] Objects and Design Final Project, Risk Game:**

- An adaptation of the multiplayer board game. Written with Scala and made in collaboration with four team members for the course.

Programming Languages

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

Courses

Computer Vision, Data & Visual Analytics, Intro to Grad Algorithms