Reagan Kan
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Education

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

Work Experience

➢ **Georgia Tech Research Institute**   **Aug. 17, 2020 – Dec. 18, 2020**
Student Research Assistant: Adversarial Machine Learning
- o Implemented the Integrated Gradients attribution method
- o Selected features with robustness against adversarial attacks for PDF malware detectors
- o Wrote Angular unit-tests for the application user interface

➢ **Georgia Tech Research Institute**   **May 18, 2020 – Jul. 26, 2020**
Research Intern: Adversarial Machine Learning
- o Studied adversarial attacks and defenses in image & malware domains
- o Leveraged the PeePDF tool to automate the Reverse Mimicry Attack on PDF malware detectors
- o Tested the effectiveness of the Reverse Mimicry Attack on TensorFlow PDF malware classifiers

➢ **Georgia Tech**   **Jan. 6, 2020 – May 1, 2020**
Undergraduate Teaching Assistant: CS 2050 Intro Discrete Math
- o Graded assignments and exams, held weekly office hours, co-taught weekly recitation section

➢ **Georgia Tech Research Institute**   **Aug. 19, 2019 – Dec. 13, 2019**
Machine Learning Student Research Assistant: EMADE
- o Researched genetic automated machine learning (autoML)
- o Integrated new evolvable computer vision tracking algorithms into EMADE, an autoML framework

➢ **Georgia Tech Research Institute**   **May 20, 2020 – Jul. 26, 2019**
Research Intern: EMADE
- o Determined the plausibility of integrating a co-evolutionary approach in EMADE
- o Designed a test bed that runs genetic programming processes to simulate EMADE's behavior
- o Wrote python scripts for generating plots and visualizations of the data collected from experiments

➢ **Georgia Tech**   **Jan. 7, 2019 – May 3, 2019**
College of Computing Tutor: Discrete Math and Object Oriented Programming in Java
- o Tutored students in one-on-one appointments

Projects

➢ **[Fall 2020] Data & Visual Analytics Final Project**
- o Trained classifier for predicting the tumor type of Neurofibromatosis patients
- o Identified drug targets for the most highly expressed genes in Neurofibromatosis patients
- o Visualized gene/tumor correlations in an interactive heatmap

➢ **[Fall 2020] Computer Vision Projects**
- o Hybrid Images: used image filtering to make images that change appearance at near/far viewpoints
- o Image Classification: compared neural network classifiers, three convolutional networks and a fine-tuned AlexNet, with a 15-class dataset
- o 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
- o RANSAC: implemented RANSAC to estimate the fundamental matrix of image pairs

➢ **[Spring 2019 – Spring 2020] Junior Design Project**
- o NLP sub-team of the Automated Algorithm Design Team, which works to expand EMADE

- o Added stemming and lemmatization primitives
- o Implemented architecture for multilabel classification with neural networks
- **[Spring 2020] Deep Learning Final Project:**
  - o Compared various methods for link prediction on YouTube dataset
  - o Added spectral embedding to SEAL framework, which uses Graph Neural Networks
- **[Fall 2019] Machine Learning Final Project:**
  - o Compared classification techniques, including regression, random forests, and neural networks
  - o Evaluation based on performance on Crowdsourced Mapping Data Set
- **[Summer 2019] Sudoku:**
  - o Web based Sudoku game written with Javascript
- **[Spring 2019] Computer Organization & Programming Project, 2048 Game:**
  - o Single player puzzle game designed using C for the Game Boy Advance
- **[Spring 2019] Objects and Design Final Project, Risk Game:**
  - o 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, SQL

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