Reagan Kan
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Education

MS in Computer Science, Georgia Institute of Technology, Atlanta, GA — GPA 4.00 / 4.00
Machine Learning Specialization
BS in Computer Science, Georgia Institute of Technology, Atlanta, GA — GPA 3.92 / 4.00

Work Experience

- **Amazon Web Services** — **Aug. 16, 2021 – Nov. 05, 2021**
  SDE I Intern: Amazon Managed Grafana
  - Designed addition of Amazon Relational Database Service Proxy
  - Provided a recommendation after considering the pros/cons of the design and load test results
- **Mitchell International** — **May 17, 2021 – Aug. 06, 2021**
  Data Science Intern: Intelligent Recommender Team
  - Evaluated existing machine learning models. Showed ability to audit vehicle insurance claims
  - Trained and evaluated Denoising Autoencoders, Variational Autoencoders, and Generative Adversarial Networks for vehicle insurance claim auditing. Models built using TensorFlow
- **Georgia Tech Research Institute**
  Student Research Assistant: Adversarial Machine Learning — **Aug. 17, 2020 – Dec. 18, 2020**
  - 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

  Research Intern: Adversarial Machine Learning — **May 18, 2020 – Jul. 24, 2020**
  - 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 detectors

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

  Research Intern: EMADE — **May 20, 2019 – Jul. 26, 2019**
  - Designed a simulator that runs genetic programming processes to model EMADE's behavior
  - Extended the simulator to run a novel technique, co-evolution of fitness predictors
  - Wrote python scripts for generating plots and visualizations of the data collected from experiments

Projects

- **Imaging with Data-Driven Models Final Project**
  - Proposed a novel, hybrid low shot learning method for compressive sensing
  - Demonstrated improvement over the best existing low shot learning method (0.97% to 4.83% PSNR increase)
- **AI Storytelling Final Project**
  - Built an AI to generate stories given an initial prompt
  - Used GPT language model prompting to guide story generation and a knowledge graph to keep a "working memory"
- **Internet Data Science Final Project**
  - Leveraged K-Means clustering (sklearn), Convolutional AutoEncoders (PyTorch), and Feature Attribution (Captum) to identify patterns in IPv4 address usage in a Autonomous System for a large cloud computing service provider
  - IPv4 data was collected by Censys
- **Interactive Robot Learning**
  - OpenAI Gym Fetch Pick-Place: Pre-training Behavior Cloning agent in simplified environments
  - Pong: Actor-Critic, Behavior Cloning, Max-Ent IRL, TAMER, Active learning
- **Web Search & Text Mining Final Project**
  - Predicted stock prices from social media and investment data
- **Mobile Manipulation Final Project**: Multi-Object Pick and Place using Mobile Manipulator
  - Implemented/compared Visibility Graphs, Modified Cell Decomposition, and Rapidly-exploring Random Trees
- **Data & Visual Analytics Final Project**
  - Trained classifier for predicting the tumor type of Neurofibromatosis patients. Achieved 85% F1-score
  - Identified drug targets for the most highly expressed genes in Neurofibromatosis patients
  - Visualized gene/tumor correlations in an interactive heatmap
- **Computer Vision Projects**
  - Hybrid Images: used image filtering to make images that change appearance at near/far viewpoints
  - Image Classification: trained/evaluated three convolutional networks and a fine-tuned AlexNet
  - Image Stitching: built a neural network (Harris corner detector and simplified SIFT) for local feature matching
  - RANSAC: implemented RANSAC to estimate the fundamental matrix of image pairs
- **Deep Learning Final Project**
  - Evaluated link prediction methods on YouTube dataset
  - Added spectral embedding to SEAL Graph Neural Network framework

Programming Languages

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

Relevant Courses

Imaging with Data Driven Models, AI Storytelling, Internet Data Science, Game AI, Interactive Robot Learning, Mobile Manipulation, Web Search & Text Mining, Computer Vision, Data & Visual Analytics, Deep Learning, Intro to AI, Intro to Grad Algorithms, Intro Perception & Robotics, Machine Learning, Object Oriented Programming in Java