ADAM NIK

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EDUCATION

Carleton College
Bachelor of Arts, Computer Science — September 2018-
3.76 GPA (4.0 scale), 3.77 Major GPA — November 2022

Relevant Courses Taken

- CS321: Making Decisions with Artificial Intelligence
  - Grade Received: A
  - Notable Topics/Skills: Adversarial Game algorithms, Genetic algorithms, Reinforcement Learning
- CS322: Natural Language Processing
  - Grade Received: A
  - Notable Topics/Skills: Markov Decision Processes, Dialogue Systems/Chatbots, Word Vectors
- CS232: Art, Interactivity, & Robotics
  - Grade Received: A
  - Notable Topics/Skills: Arduino Programming, Circuit Boarding, Work with electronic components
- MATH232: Linear Algebra
  - Grade Received: A

PUBLICATIONS

1Cademy @ Causal News Corpus 2022: Leveraging Self-Training in Causality Classification of Socio-Political Event

Accepted 10/9/2022

Adam Nik, Ge Zhang, Xingran Chen, Mingyu Li, Jie Fu

To appear in EMNLP 2022

1Cademy @ Causal News Corpus 2022: Enhance Causal Span Detection via Beam-Search-based Position Selector

Accepted 10/9/2022

Xingran Chen, Ge Zhang, Adam Nik, Mingyu Li, Jie Fu

To appear in EMNLP 2022

CURRENT RESEARCH PROJECTS

Cross Task Description Generation September 2022-Present

Project explores ways to generate instructions for datasets with few input-output pairs. We formulate this new task as an NLG task. This can also be seen as a meta-learning task, where, instead of relying on updating the meta-model with meta-gradients (or other meta-level training signals), we train a meta-model to generate high-level instructions about a wide range of tasks.

Fine-grain Emotion Detection Survey September 2022-Present

Survey paper regarding state-of-the-art techniques, datasets, and benchmarks surrounding fine-grain emotion detection in NLP.

Bio-task Data Augmentation Benchmark August 2022-Present

The focus of this project is to use data from the Therapeutic Data Commons, which provides datasets and tasks for drug discovery and development, to create a benchmark on bio data augmentation techniques. The tasks pertaining to the project include implementing and creating the benchmark for established data augmentation techniques on molecular and protein sequence data, along with formulating original data augmentation techniques to further improve model evaluation.

RESEARCH EXPERIENCE

1Cademy, University of Michigan April 2022-Present
Junior Researcher and Leader of Computer Vision Community

- Research platform focused on doing work in various topics in Deep Learning and Natural Language Processing

NOTABLE SCHOOL PROJECTS

Senior Comps Project: Intelligent User Interface-Scenic Route Generation
Fall 2022-Winter 2022 | https://cs.carleton.edu/cs_comps/2122/iui/final-results/index.html

- Project focused on path generation algorithm for optimizing scenic value of landmarks along route
- Used a convolutional neural network to classify images along route queried from Flickr
- Worked with Postgres Database to store image & map information and output from CNN
- Completed all front-end development (HTML & CSS) for project

Snake Game AI with Reinforcement Learning, CS321
Fall 2022 | https://github.com/adamnik/Snake-Game-AI

- Built a self-learning computer agent that displays human levels of game performance within 50 iterations of the game
- Developed by implementing Approximate Q-Learning with Bellman Equation

Ping Pong LED Snake Game Board, CS232
Winter 2022 | https://github.com/adamnik/Snake-Game-for-Arduino
demo: https://youtube.com/shorts/xMD4Rlx15m0?feature=share

- Built an 8x8 LED board with ping pong balls as diffusers
- Coded a Snake game compatible with Arduino board
- Completed all soldering, wiring, and circuit board work necessary for project

Scheme Interpreter, CS251: Programming Languages
Spring 2021 | https://github.com/adamnik/Tic-tac-toe-w-Minimax

- Created an interpreter for Scheme language, written in C, as part of course final project

ACADEMIC HONORS, SCHOLARSHIPS, AND GRANTS

Charles & Ellora Alliss Educational Foundation Scholarship Fall 2018-Present

Carleton Grant and Scholarship Fall 2018-Present

Dr. A.E. and Ruth Simonson Scholarship Fall 2020-Present

Sam'75 & Meg Woodside Fund for Career Exploration Summer 2022

RELEVANT SKILLS

Machine Learning Libraries
- PyTorch
- Tensorflow
- HuggingFace Transformers
- NLTK
- spaCy
- NumPy
- Pandas

Languages
- Python
- C/C++
- Java
- HTML/CSS/JavaScript
- SQL

- Prolog
- RStudio

ATHLETIC CAREER AND AWARDS

Football

- 5-year letter winner (2018-2022)

Swimming

- Team Captain for the 2021-2022 season
- All-MIAC Performer, 2022

Awards

- Mel Taube Award Recipient
    - The Mel Taube Memorial Award is given to a senior male athlete at Carleton College who has competed in at least two varsity-level sports, with emphasis on team sports in at least one. The athlete must have demonstrated exceptional loyalty, dedication, and achievement in varsity athletics.
- MIAC Academic All-Conference, 2022