EVAN CHUGH

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CURRENT RESEARCH INTERESTS

Multi-agent reinforcement learning, game theory, financial analysis.

EDUCATION

- Canisius College — Buffalo, NY
  - Bachelor of Science, Computer Science with minor in Mathematics — 2017 – 2021
  - Major GPA: 4.0
  - Minor GPA: 4.0
- SUNY Buffalo — Buffalo, NY
  - Doctor of Philosophy, Computer Science — 2021 – Present

SELECTED COURSEWORK

- CSC 112 - Data Structures
- CSC 213 - Large Scale Programming
- CSC 253 - Computer Hardware
- CSC 281 - Automata and Algorithms
- CSC 310 - Information Organization and Processing
- CSC 330 - Distributed Computing
- CSC 360 - Intelligent Systems
- CSC 395 - Software Engineering
- MAT211 - Calculus III
- MAT 219 - Linear Algebra
- MAT 311 - Abstract Algebra
- MAT 351 / 352 - Probability and Statistics I / II
- Deep Learning Specialization (Coursera, audited)

TECHNICAL SKILLS

- Programming Languages
  - Python
    - Machine Learning: PyTorch, Tensorflow, NumPy, Scikit-learn
    - Multiprocessing, distributed computing
  - Java
  - C++
- Operating Systems: Linux, Windows, MacOS
- Research
  - Paper-to-code implementations
  - Scientific writing experience

INTERNSHIPS & EMPLOYMENT HISTORY

- Research Assistant 2018 – 2021
  - See ”Research Grants”
- Tutor 2018 – 2021
  - Assisted students in a laboratory setting. Reinforced class concepts in small group and individual settings.
- Grader 2018 – 2021
  - Graded student homework assignments for Mathematics department.

AWARDS AND HONORS

- Canisius Earning Excellence Program, 2018
- Canisius Earning Excellence Program, 2019
- Canisius Earning Excellence Program, 2020
- Canisius College Excellence in Research Award, 2021
- Dean’s List, 7 of 7 semesters

RESEARCH GRANTS

2018 - Present (received at Canisius College)

- “Electroskip: Using Machine Learning to Improve Patient Response in Physical Therapy”
  - Investigated the use of recurrent neural networks in creating real-time responses to human motion. Used gait and pressure data for classification of patients with Parkinson’s Disease. Implemented a data collection system into the existing application pipeline. A study based on this work has shown moderate success in correcting the gait of patients with Parkinson’s Disease.
- “Applications of Convolutional Neural Networks in Echocardiogram Analysis”
  - Independently established a relationship between Canisius College and a local medical practice. Gained experience with IRB and HIPAA guidelines. Created a utility to automate removal of PHI. Worked with healthcare providers to label key dimensions frequently referenced during diagnosis. Constructed a convolutional neural network for heart chamber segmentation, achieving 98% pixel-wise accuracy over a validation set by leveraging data augmentation with a training set of approximately 180 images.
- “Reinforcement Learning: An Examination of Historical Developments”
  - Worked both independently and with Computer Science faculty to update course content for CSC360: Intelligent Systems. Provided written descriptions of major breakthroughs in reinforcement learning along with current areas of research. Created interactive code environments to assist in student understanding.

PRESENTATIONS

- “Electroskip: Using ML to Improve Patient Response in Physical Therapy” April 2019
- “Applications of Convolutional Neural Networks in Echocardiogram Analysis” April 2020

MEMBERSHIPS

- AAAI
- MAA

EXTRACURRICULAR ACTIVITIES AND SERVICE

- Classical Guitar 2007 – Present
    - Studied classical guitar under the instruction of the Castellani-Andriaccio Duo
    - Attended master classes taught by world-renowned concert guitarists
    - Performed regularly in concert and professional settings
- Clarence Youth Bureau 2015 – Present
    - Organized charity events
    - Participated in community environmental cleanups

REFERENCES – UPON REQUEST