Maia R. Iyer

Computer Science Master's Student
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EDUCATION

M.S. in Computer Science **exp. graduation May 2022**

Carnegie Mellon University, School of Computer Science **Pittsburgh, PA**

Anticipated Fall 2021 Coursework:
Logical Foundations of Cyber-Physical Systems, Causality and Machine Learning, Database Systems, Multimodal Machine Learning

B.S. in Computer Science - Graduated with University Honors and Minor in Logic and Computation **May 2021**

Carnegie Mellon University, School of Computer Science **Pittsburgh, PA**

Extra-Curriculars: Teaching Assistant for Computer Music, Complexity Theory, AI Representation and Problem Solving, Game Theory, Probability Theory for CS, Calculus in Three Dimensions, and Moot Court Competing Member

Highlighted Coursework:

- Deep Reinforcement Learning and Control; Advanced Topics in Machine Learning and Game Theory; Deep Learning; AI: Representation and Problem Solving; Neural Computation
- Constructive Logic; Modal Logic; Game Theory; Decision Theory
- Distributed Systems; Nature of Language; Modeling Evolution; Quantum Computation; Complexity Theory

WORK EXPERIENCE

IBM Corporation Research Intern **Yorktown Heights, NY Summer 2021**

■ Experience working across the full-stack on open-source project Tornjak, a tool for secure workload management across multiple cloud platforms ■ Developed backend with Golang and relational database design in SQLite ■ Exposure to frontend programming in ReactJS and Redux ■ Received leadership award for effective communication and initiative to host intern events

IBM Corporation Research Intern **Yorktown Heights, NY Summer 2020**

■ Exposure to container images, Docker, and Kubernetes container orchestration technology ■ Wrote Golang packages and executables to demonstrate a proof of concept on incorporating container image encryption into a secure container deployment pipeline ■ Capped project with a live demo ■ Completed IBM Quantum Conversations course

University of Connecticut National Science Foundation REU Intern **Storrs, CT Summer 2019**

■ Researched Intel's Software Guard Extensions (SGX) Technology architecture and security vulnerabilities ■ Analyzed performance overheads of SGX as implemented in C++ through benchmarks in small and large, highly interactive applications ■ Conducted work on both Windows and Linux environments ■ Statistically compared performance overheads of SGX that is secure against cache-timing attacks ■ Wrote technical paper and presented findings to university research staff

Indiana University-Purdue University National Science Foundation REU Intern **Indianapolis, IN Summer 2018**

■ Researched natural language processing using neural networks ■ Wrote paper primarily focused on semantic parsing of medical text which included modification of Tensorflow's Python word2vec code to incorporate syntactic dependency parsing information into word vector models and use of t-SNE projections ■ Paper published in the 2018 IEEE International Conference on Bioinformatics and Biomedicine, titled "Incorporating Syntactic Dependencies into Semantic Word Vector Model"

ACADEMIC PROJECTS

Intermediate Deep Learning Project, Fall 2020

■ Implemented evolutionary algorithm for timbre transfer on sound clips ■ involved Fourier transform for visual analysis of audio with convolutional neural networks ■ Used AWS resources for neural network training and testing

Patent NLP Research, Fall 2019 - Spring 2020

■ Lower-level text analysis and tool building for data extraction from patent text ■ Experience with dependency parsers and word vectors ■ Partial automation of patent indefiniteness analysis

Neural Computation Research Term Project, Spring 2019

■ Researched Liquid State Machine, a type of spiking neural network that models brain dynamics of neurons ■ Analyzed and wrote paper on how the inhibitory excitatory neuron ratio affects the spiking behaviors of the spiking liquid

Fundamentals of Programming Term Project, Fall 2017

■ Three week product design and implementation of a system that creates music according to mood in Python ■ Involved KNN machine learning model programmed from scratch to generate music and live facial detection with simple smile and facial feature recognition to detect mood

SKILLS

Programming Languages and Experience

- Python, C, Golang, SML, SQL, Matlab, HTML/CSS, Javascript
- Experience building, creating, and running container images with Docker and container workload deployment through Kubernetes container orchestration technology
- Experience using AWS computing resources
- Open-source work earned Arctic Code Vault Achievement in Git

Other Skills

- Latex technical writing
- Passion for teaching
- Extensive experience holding lecture-style recitation, office hours, written assignment creation, oral assignment proctoring, grading, and effective communication online in TA jobs and internship presentations