Shilin Ma

Education

Carnegie Mellon University Pittsburgh, PA
Master of Science in Computer Science Dec 2023

Coursework towards doctoral education and research in Mathematical Sciences | GPA: 3.82/4.33 Aug 2018 – Jan 2022
Master of Science in Mathematical Sciences May 2020

- Selected coursework: Machine Learning with Large Datasets, Convex Optimization, Graduate Algorithms
- Teaching Assistant for Calculus in Three Dimensions (Lead TA), Basic Logic, and Concepts of Mathematics

Carleton College Northfield, MN
Bachelor of Arts in Mathematics | GPA: 3.72/4.0 June 2018

- Selected coursework: Computer Security, Computability and Complexity, Advanced Linear Algebra

Work Experience

Microsoft Shanghai, China
Software Engineer Intern July – Aug 2021

- Designed a web app to visualize the data flow in the ERP software Dynamics 365
- Collaborated with another intern and coded the backend of the web app in C#
- Received positive feedback from product management

Speakin AI Shanghai, China
Algorithms Intern May – June 2021

- Created an algorithm in Python for online multi-microphone de-duplication that overlooks non-speaker microphone inputs for generating meeting transcripts
- Prepared data and trained an n-gram language model for Points of Interest locations and merged it with a general model to improve voice recognition performance

Projects

Rasterizer Carnegie Mellon University | Sep 2022

- Implemented complete graph rasterization pipeline using techniques such as mip-map and super-sampling in C++

Zykov-based Graph Coloring Proof Carnegie Mellon University | Oct – Dec 2021

- Modified the satisfiability solver CaDiCaL (written in C++) to incorporate Zykov contractions in graph coloring problems
- Achieved an average speedup of 3.8x on select non-colorable benchmarks

Neural Network Pruning Carnegie Mellon University | Nov 2021

- Applied magnitude-based model compression techniques in TensorFlow to an image classification network
- Achieved a sparsity of over 80% while maintaining a threshold level of accuracy

Machine Learning with the Million Song Dataset Carnegie Mellon University | Oct 2021

- Conducted data conversion and preparation on the Million Song Dataset using AWS
- Implemented feature engineering and optimized a model for popularity prediction via hyper-parameter tuning

Activities

Advanced Course Instructor Blissful Coding Club | Oct 2022

- Teaching Python to a group of 15 students from underserved communities twice a week

Midwest Regional Competition Terminal Live | Mar 2021

- Designed and crafted an algorithm that battles with strategic attacks and optimized resource placement in a game-based coding competition sponsored by Citadel
- Collaborated in a team of three and collectively won a $1000 prize for 9th place (out of 47 teams)

Skills

Programming: Python, Java, C#, C, C++, LEAN
Languages: Mandarin Chinese (native), English (fluent), Spanish (intermediate)