Shilin Ma

EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Computer Science | GPA: 4.06/4.33 Dec 2023
- Selected coursework: Web Application Development, Parallel Computer Architecture and Programming, Large Language Model Methods and Applications, Algorithm for Big Data
- Teaching Assistant for Computer Graphics (Spring and Fall 2023)
- Sponsored for attending SACNAS 2023 by the School of Computer Science DEI Team

Coursework towards doctoral education and research in Mathematical Sciences | GPA: 3.84/4.33 Aug 2018 – Jan 2022
Master of Science in Mathematical Sciences May 2020
- Selected coursework: Machine Learning with Large Datasets, Convex Optimization, Graduate Algorithms

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

SKILLS

Languages: Python, C, C++, Java, C#, HTML, CSS, JavaScript, SQL, LEAN

Packages and Platforms: AWS, Databricks, Django, GCP, JQuery, NumPy, Pandas, PySpark, PyTorch, TensorFlow

WORK EXPERIENCE

Acadian Asset Management Boston, MA
Investment Research Intern May – Aug 2023
- Implemented, investigated, and improved an algorithm that reduces transaction costs using Pandas and PySpark
- Code put into production and is estimated to impact 27 billion USD of the company's trades annually
- Comprehended an extensive codebase for fitting transaction models, proposed improvements, conducted preliminary experiments, and presented the results to the entire research team

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

PROJECTS

Specular Manifold Sampling Carnegie Mellon University | Apr – May 2023
- Won the technical award for the Physics-Based Rendering class by implementing unbiased Specular Manifold Sampling and was sponsored to attend SIGGRAPH 2023 conference
- Modified the C++ codebase to keep track of the specular surfaces in a scene, calculate the position and surface normal partial derivatives, and use Newtown's method to perform manifold walk

ASR Model for Accented Speech Carnegie Mellon University | Apr – May 2023
- Finetuned the open source ASR model Whisper using Mozilla Common Voice Dataset with importance sampling
- Achieved better and more evenly distributed performance across accents (17.46% reduction in word information loss and 33% reduction of chi-squared statistics) represented in the GMU dataset

Footprints Web App Carnegie Mellon University | Mar – May 2023
- Developed a social media platform for sharing maps with Django framework using Google Maps API, OAuth, and AJAX
- Coded the frontend with REACT and Bootstrap and deployed the web app on an EC2 instance with Apache
- Practiced the agile methodology for project management as the scrum master for a team of four

Face Classification and Verification Carnegie Mellon University | Feb – Mar 2023
- Built from scratch and trained a ConvNeXt model for classifying images of 7000 individuals and achieved 92% accuracy
- Finetuned the network using ArcFace loss and exceeded 66% accuracy for determining if a face belonged to any person in the training dataset (top 5% of class)