Xingjian Diao

Portfolio: https://xingjiandiao.github.io/
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EDUCATION

Northwestern University **Evanston, IL**
Master of Science in Computer Science Expected January 2022

- **GPA:** 4.0 / 4.0; **Major GPA:** 4.0 / 4.0
- **Relevant Coursework:** Human-Computer Interaction, Introduction to Artificial Intelligence, Introduction to Computational Photography

University of Pittsburgh **Pittsburgh, PA**
Bachelor of Science in Computer Science August 2016-April 2020

- **GPA:** 3.45 / 4.0; **Major GPA:** 3.60 / 4.0
- **Honors:** CS department honors, Arts and Sciences honors, Dean's List (2018-2019)
- **Relevant Coursework:** Introduction to Operation Systems, Software Engineering, Database Management Systems, Software Quality Assurance, Introduction to Data Science, Software Design Methodology
- **Capstone: University of Texas Southwestern Medical Center** (*Intern*, May-August 2019; May 2020-Current)
- Enhanced the hospital's manual data analytics process by building a multi-species database on MySQL and designing a user-friendly application via RStudio
- Synthesized multiple algorithms for the computational analysis of genomics and proteomics data needed for auto-Antibody Profiling Analysis
- Helped create tools to improve the efficiency of data cleaning and analysis, which sped up data processing and successfully met project deadlines

PUBLICATION

Building a Cloud-based Energy Storage System through Digital Transformation of Distributed Backup Batteries in Mobile Base Stations **Pittsburgh, PA**
Researcher (*joint work with S. Ci, Y. Zhou, Y. Xu and J. Wang)* September 2019-April 2020

- **Publication:** S. Ci, Y. Zhou, Y. Xu, X. Diao and J. Wang, "Building a cloud-based energy storage system through digital transformation of distributed backup battery in mobile base stations," in China Communications, vol. 17, no. 4, pp. 42-50, April 2020, doi: 10.23919/
- Explored disruptive DES technology and its application under the context of mobile BSs
- Introduced a cloud-based energy storage (CES) platform based on large scale distributed DESs to provide energy storage service to a local utility company, showing the effectiveness and efficiency of the CES platform
- Proposed a CES platform based on DES technology to improve battery management and control and online operation and maintenance, achieving lower equipment operating costs and maintenance and increasing revenue in 5G BS operations

Reach On Waste Classification and Identification by Transfer Learning and Lightweight Neural Network **Shandong, China**
Researcher (joint work with X.Xu and X.Qi, Shandong Jianzhu University) December 2018-January 2020

- **Publication:** Xu, X.; Qi, X.; Diao, X. Reach on Waste Classification and Identification by Transfer Learning and Lightweight Neural Network. Preprints 2020, 2020020327
- Presented a waste classification and identification method based on transfer learning and lightweight neural networks by migrating the lightweight neural network MobileNetV2 and rebuilding it
- Reconstructed a network for feature extraction with extracted features introduced into the SVM to realize the identification of six types of garbage
- Trained and verified the model by using 2527 pieces of garbage labeled data in the TrashNet dataset, which ultimately resulted in a classification accuracy of 98.4%, proving that the method effectively improves classification accuracy and saves time

RESEARCH EXPERIENCE

Shandong Jianzhu University **Shandong, China**
Intern June-December 2018

- **Copyright**: (Applied for and received copyright) 2018SR071476 from Copyright Protection Center of China
- Helped develop an Online Drawing Management System based on the B/S structure and Windows Operating system; primarily worked with C# and JavaScript to write over 4,000 lines of code
- Implemented functionalities such as notice announcement, interface, navigation menus, and user and role management as well as the online management system for a large number of drawing documents
- Completed automatic database loading based on the existing document storage structure of drawing documents without manually entering the basic information of existing drawings, reducing user search time

Energy-Aware joint clustering and scheduling for multicast beamforming in Cloud-RAN downlink
Researcher January 2018-March 2019

- Addressed the issues of interference and power consumption in multicast downlinks of Cloud Radio access Networks. My contribution was to develop an alternative Iterative Approximation algorithm with linear runtime and to verify its effectiveness via simulations.

PROJECT EXPERIENCE

Introvert Software Engineering **Pittsburgh, PA**
Creator January-April 2020

- Created an inclusive communication environment for introverted students using JavaScript, JSON, AJAJ, Python, Flask, SQLAlchemy, and Google Cloud platform
- Promoted engagement for introverted people to more easily chat online
- Implemented anonymous chatting protocols to mask identity
- Developed an interface that allows "dm"-ing people of interest

Historical bike rental data analysis **Pittsburgh, PA**
Creator January-April 2020

- Summarized and cleaned 2019 rental data from HealthyRidePGH
- Created graphs to show users the popularity of different rental stations, given filters
- Used graphs to show the rebalancing issues
- Clustered data to group similar stations together, using a variety of clustering functions, and visualized the results of the clustering

A JDBC application to manage PittSocial **Pittsburgh, PA**
Creator September-present 2019

- Created the Java framework of *PittSocial*, the social networking system for the University of Pittsburgh
- Designed and developed a large database out of real-life information via Java, PostgreSQL, and JDBC

DownHat Software Engineering **Pittsburgh, PA**
Developer December 2018-May 2019

- Developed an Android mobile application designed to automate and combine class attendance-taking and participation points into a single, cohesive system intended to create an inclusive environment for socially conscious students

JrMIPS CPU Design **Pittsburgh, PA**
Developer December 2017-May 2018

- Implemented Logisim on CPU to produce a program counter that automatically increments each clock cycle, instruction memory giving instructions to the PC, a register file, an instruction decoder, an arithmetic logic-unit and a data memory for its access, and a four-digit hexadecimal display for output through LED

MIPS Game Design **Pittsburgh, PA**

Developer January-May 2018

- Developed a modified version of the iconic video game called "Space Invaders" in MIPS Assembly Language

LEADERSHIP EXPERIENCE

CSSA (Chinese Students and Scholars Association) of University of Pittsburgh **Pittsburgh, PA**
Core Member (Human Resources & Planning) 2018-2019

- Planned and held the Spring Festival and Mid-Autumn Festival shows, attracting more than 300 attendees
- Negotiated the leases for venue and equipment; managed attendance and registration of students and guests
- Managed the recruitment and management of volunteers; collaborated with other CSSA departments on various events

ICreate Training School **Shandong, China**
Tutor July-August 2017

- Held classes on the foundations of programming languages and taught a class of kids 5-7 years old class about tools like Scratch
- Prepared teaching materials and presentations for the kids, helping them become more confident in coding

SKILLS, INTERESTS & OTHER INFORMATION

Languages: Mandarin Chinese (Native); English (Fluent)
Technical Skills: Proficient in programming tools (Java, R, Python, C++, Ruby, and MATLAB), big data programs (PostgreSQL, MySQL, SQLite), machine learning systems (TensorFlow, PyTorch), web design tools (HTML, JavaScript, jQuery, CSS, BootStrap, JSON, AJAJ, Flask, SQLAlchemy), and administrative programs (UNIX, Git, LaTeX, Markdown, Microsoft Office, Adobe Photoshop)
Activities: Red Cross – Volunteer
Patents and Copyrights: *204055049U* (pen that functions as a ruler, acidometer, PH meter and gradiometer) https://patents.google.com/patent/CN204055049U/en; *2018SR071476* (Drawing management design system) http://www.ccopyright.com
Interests: Piano (10-10 level certification from the Chinese Musician Association)