

Tianjia Wang

wangt7@vt.edu

EDUCATION

Virginia Tech

USA

Ph.D. in *Computer Science*

Aug 2021 – Now

GPA: 3.95

Rochester Institute of Technology

USA

M.S. in *Software Engineering*

Aug 2019 – May 2021

GPA: 3.89

Rose-Hulman Institute of Technology

USA

B.S. in *Computer Science*

Sept 2015 - Aug 2018

Minor in *Japanese*

GPA: 3.01

Miami University

USA

B.S. in *Computer Science*

Aug 2013 - May 2015

GPA: 3.61

PUBLICATION

Tianjia Wang, Ramaraja Ramanujan, Yi Lu, Chenyu Mao, Yan Chen, Chris Brown. “DevCoach: Supporting Students in Learning the Software Development Life Cycle at Scale with Generative Agents.” In *Learning @ Scale 2024* [Work in Progress]

Tianjia Wang, Daniel Vargas Díaz, Chris Brown, and Yan Chen. "Exploring the Role of AI Assistants in Computer Science Education: Methods, Implications, and Instructor Perspectives." In *2023 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, pp. 92-102. IEEE, 2023.

Eman Abdullah AlOmar, **Tianjia Wang**, Raut Vaibhavi, Mohamed Wiem Mkaouer, Christian Newman, and Ali Ouni. 2021. “Refactoring for Reuse: An Empirical Study.” *Innovations in Systems and Software Engineering* (2022), 1–31.

Eman Abdullah AlOmar, Philip T. Rodriguez, Jordan Bowman, **Tianjia Wang**, Benjamin Adepoju, Kevin Lopez, Christian Newman, Ali Ouni, Mohamed Wiem Mkaouer. “How Do Developers Refactor Code to Improve Code Reusability?” *The 19th International Conference on Software and Systems Reuse (ICSR)*, 2020.

RESEARCH EXPERIENCE

Chinese Academy of Sciences

Nov 2018 – June 2019

Research Assistant

Department of High-Performance Computing

- Exploring and validating traditional and machine learning-based key node detection algorithms for the project RAID Card Bottleneck Analysis and Performance Modeling which aims to build an open-source benchmark tool for performance visualization and prediction
- Implementing and optimizing an algorithm for comparing RNA sequences similarity in the research paper “Accelerated Structural Design for Graphical Based Genetic Similarity Algorithm”

WORK EXPERIENCE

Sogou Inc.

May 2015 - July 2015

Quality Assurance

Department of Sogou Map

- Leading comprehensive testing protocols, including Unit, Functional, and Stress testing, for various features in the Sogou Map Android application.
- Excelling in identifying, documenting, and reporting bugs, errors, and interoperability issues, contributing significantly to application quality.
- Consistently earning recognition from developers, project managers, and supervisors for outstanding problem-solving and analytical skills.

TEACHING EXPERIENCE

- Adjunct Instructor of CS 2505 - Computer Organization I, Summer 2024, Virginia Tech
- Graduate Teaching Assistant of CS 5664 - Social Media Analytics, Spring 2024, Virginia Tech
- Graduate Teaching Assistant of CS 5744 - Software Design and Quality, Fall 2023, Virginia Tech
- Graduate Teaching Assistant of CS 5664 - Social Media Analytics, Spring 2023, Virginia Tech
- Graduate Teaching Assistant of CS 5744 - Software Design and Quality, Fall 2022, Virginia Tech
- Graduate Teaching Assistant of CS 2505 - Computer Organization I, Spring 2022, Virginia Tech

SERVICE

- Reviewer for Group 2025, CHI PLAY 2024, CHI 2024, CSCW 2024, CSCW 2023.

RELEVANT COURSEWORK

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| • Design and Analysis of Algorithms | • Programming Language Concepts |
| • Computer Architecture I, II | • Theory of Computation |
| • Operating Systems | • Research Methods |
| • Model-Driven Development | • Artificial Intelligence |
| • Collaborative Software Development | • Machine Learning |
| • Software Quality Assurance | • Modeling Human Perception Data |
| • Software Architecture | • Natural Language Processing |
| • Engineering Cloud Software Systems | • Statistics in Research |
| • Engineering Self-Adaptive Software Systems | • Computational Social Science |

COURSE PROJECT

Analyzing Gender Biases and Stereotypes in Multilingual News

- Proposing a framework using word2vec and dependency parsing to analyze biases and stereotypes in multilingual news
- Conducting an experiment by applying this framework to a multilingual dataset containing news articles from BBC in English, Chinese, and Japanese
- The result indicates the presence of gender biases and stereotypes related to occupation and appearance in the news across all selected languages

SemEval 2022 Task 8: Multilingual News Article Similarity

- Designing and implementing a framework to estimate the overall similarity of multilingual news articles
- Proposing an algorithm that completes the task by using language-level distance differences in word embedding to allow training with only English data and apply to other languages
- Leveraging SOTA models such as BERT-NER, Stanford CoreNLP, and DistilBART to extract key information on geography, entities, temporal aspects, and narratives

Multimodal Song Emotion Recognition with Audio and Dynamic Facial Expression

- Extracting audio features from songs using Librosa and action units (facial expressions) from videos using OpenFace in the Ryerson Audio-Visual Database of Emotional Speech and Song.
- Training a Random Forest model and a Convolutional Neural Network to precisely classify and recognize six unique emotions within the dataset.
- The results show that incorporating facial expressions with audio to train the models enhances the accuracy of classifying emotions in songs, especially for neutral and sad emotions.

Smart Home Manager

- Designing and implementing a cloud-based solution to enable users to control devices across different protocols in one easy-to-use web application
- Using CloudFormation to efficiently allocate and manage the resources in AWS by treating infrastructure as code

UML Generator

- Creating a tool to generate the most essential elements of the UML class diagram for arbitrary Java code, including classes, methods, instance variables, and inheritance arrows.
- Responsible for analyzing the requirement, drawing the UML diagram, designing the prototype, and implementing unit tests for the parser and the relation finder.

HONORS AND AWARDS

- Graduate Merit Scholarship from Rochester Institute of Technology
- International Student Scholarship from Rose-Hulman Institute of Technology

SKILLS

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| • Programming Language: Java, Python, C, C++, Pascal | • Mobile Development: Android |
| • Web Development: JavaScript, TypeScript, HTML, CSS | • Web Framework: React, Node.js, Flask |
| • Database: SQL Server, Firebase, MongoDB, DynamoDB | • Operating System: Windows, Linux |
| • AI: PyTorch, scikit-learn, TensorFlow | • Script: Shell Script |
| • Natural Language: Chinese(native), English(fluent), Japanese(intermediate) | |