YIFAN (ERIC) ZHANG

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RESEARCH INTERESTS

My general research interest is **computer science education**, specifically:
- Broaden participation and data-driven learning analytics in cultural relevant music programming,
- Integration of computational thinking (CT) with non-CS subjects,
- Professional development (PD) in computer science for K-12 teachers.

EDUCATION

August 2019 – Present
Ph.D. student. University of Delaware, U.S.
Research Interests: Computer Science Education, Data-Driven Learning Analytics, Computational Thinking, Teacher Professional Development
Advisor: Dr. Lori Pollock

August 2019 – May 2022
M.S. in Computer Science. University of Delaware, U.S.
Selected Courses: Data Mining, Human Computer Interaction, Artificial Intelligence, Machine Learning
GPA: 4.0
Advisor: Dr. Lori Pollock

September 2016 – December 2017
M.S. in Management. Brunel University of London, U.K.
Thesis Project: *Impact of Brand Positioning Perception and Differentiation on Consumers' Purchase Intention*
Selected Courses: Entrepreneurship, Technology Management, Management Research.

September 2010 – June 2014
B.S. in Computer Science. Nankai University Binhai College, China.
Thesis Project: *Design and Implementation of Logistics Positioning System in Android Smartphone*
Selected Courses: Data Structure and Algorithms, Java Programming, Data Base.

PUBLICATIONS

Paper:
Yifan Zhang, Douglas Lusa Krug, Chrystalla Mouza, David C. Shepherd, and Lori Pollock. 2022. A Case Study of Middle Schoolers' Use of Computational Thinking Concepts and Practices during Coded Music Composition. In *Proceedings of the 27th ACM Conference on Innovation and Technology in Computer Science Education Vol 1 (ITiCSE 2022)*. ACM, New York, NY, USA, 1315. [ACM DL][Paper][Slides]

Second author of a paper submission to a Tier A conference. Under anonymous review

Poster:
Yifan Zhang, Amanda Mohammad Mirzaei, Lori Pollock, Chrystalla Mouza, and Kevin Guidry. 2021. Exploring Computational Thinking Across Disciplines Through Student-Generated Artifact Analysis. In

Proceedings of the 52nd ACM Technical Symposium on Computer Science Education (*SIGCSE '21*). ACM, New York, NY, USA, 1315. [ACM DL][Abstract] [Poster]

RESEARCH EXPERIENCE

June 2022 – Present
Principle Investigator, Department of Computer and Information Sciences, University of Delaware, U.S.
Research Project: *Supporting K12 Teachers through Co-design of a Filter-based CS Lesson Locator for Integrating CS*
  • Participant Design (PD) of a Filter-based CS Lesson Locator
  • Collect free CS curricula and lessons
  • Teachers will be able to search and filter keywords, e.g., grades and coding environments
Advisor, Co-PI: Dr. Lori Pollock

January 2021 – Present
Research Assistant, Department of Computer and Information Sciences, University of Delaware, U.S.
Research Project: *Exploring Student Learning Behaviors in Music Programming Process*
  • Leveraged music programming as cultural motivation
  • Provided positive learning experience for young students
  • Shed light on learning analytics in music programming process
Advisor: Dr. Lori Pollock

July 2020 – Present
Research Assistant, School of Education, University of Delaware, U.S.
Research Project: *Exploring Differences of Learning Behaviors Between Expert and Novices in Block-based Programming*
  • Distinguished learning behavior patterns among students with different prior experiences
  • Tailored scaffolding according to students' individual learning progress
Collaborator: Dr. Teomara Rutherford

June 2020 – June 2021
Research Assistant, Department of Computer and Information Sciences & School of Education, University of Delaware, U.S.
Research Project: *Exploring Computational Thinking Across Disciplines Through Student-Generated Artifact Analysis*
  • Leveraged computational thinking skills for general problem solving
  • Analyzed exhibition of computational thinking skills among non-computer science disciplines
  • Summarized experience for instructors to design the curriculum
Advisor: Dr. Lori Pollock, Dr. Chrystalla Mouza

February 2018 – December 2018
Research Fellow, School of Information Engineering, Huanghuai University, China.
Research Project: *Studies on Compressing Component to Miniaturize Handwritten Text Recognizer by Optimizing Algorithmic Rules*
  • Focused on the construction and miniaturization of offline character segmentation classifier
  • Collected on-line handwritten character patterns of 360 writers, covering 7000-character classes
  • Conducted comparative experiments of pattern normalization
  • Used Python language to train a CNN-based character segmentation classifier

Advisor: Dr. Jinfeng Gao

September 2013 - June 2014
   Undergraduate Research Assistant, Nankai University Binhai College, China
   Research Project: *Design and Implementation of Logistics Positioning System in Android Smartphone*
      • Designed a transportation platform for individual truck drivers receiving the orders from factories to maximize efficiency
      • Designed the system including software, process flow, server, a customized database, and an Android app.
   Advisor: Jiaxin Liu

PROFESSIONAL EXPERIENCE

June 2022
   Instructor, *Partner4CS*
      • TunePad for Composing Music through Coding

September 2021 – December 2021
   Teaching Assistant, Department of Computer and Information Sciences, University of Delaware, U.S.
      • 21 Fall - CISC357 Engaging Youth in Computing
   Coordinator/Host, Department of Computer and Information Sciences, University of Delaware, U.S.
      • 21 Fall - CISC890 SIGCSE: Special Interest Group on Computer Science Education

January 2021 – June 2021
   Teaching Assistant, Department of Computer and Information Sciences, University of Delaware, U.S.
      • 21 Spring - CISC320 Algorithms

December 2017 – July 2019
   Technology Solutions Manager, Henan Yupo Group, Henan Province, China.
      • Led to develop a product traceability information system
      • Led to develop an information management and communication system

June 2014 – July 2016
   Assistant Market Manager, Henan Yupo Group, Henan Province, China.
      • Built a new server and a new database as part of the logistics and data management project
      • Developed a system for truck carriers to plan routes

HONORS AND AWARDS

September 2014
   Excellent Undergraduate Thesis of Tianjin Province
   Tianjin Municipal Education Commission, China

July 2014
   Second Place Winner, The National Design Competition
   Computer and Software Engineering Department, Ministry of Education of China

December 2013
   University Scholarship

Nankai University Binhai College, China

April 2013
   Second Place Winner, The National Software Professionals Design Competition
   Talent Exchange Center, Ministry of Industry and Information Technology of China

December 2011
   University Scholarship
   Nankai University Binhai College, China

VOLUNTEERING

2022 – Present
   Peer mentor of [EmPOWER](#) project
   College of Engineering, University of Delaware

2013 - 2019
   Mentor to high school students from STEM disciplines for further career development
   Entrepreneur Association of Henan Province, China

2014 - 2019
   Volunteer to support low-income residents enrolling in the national welfare system
   Federation of Labor Unions, Henan Province, China

MEMBERSHIP

   ACM SIGCSE student member
   IEEE student member