

# YIFAN (ERIC) ZHANG

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## RESEARCH INTERESTS

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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

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*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

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### 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

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*June 2022 – Present*

**Researcher**, Department of Computer and Information Sciences, University of Delaware, U.S.

Research Project: *Supporting K-8 Teachers through Co-design of a Filter-based CS Lesson Locator for Integrating CS*

- Participant Design (Co-design) 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, to effectively and efficiently locate online resources

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

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*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

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*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**

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*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**

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ACM SIGCSE student member

IEEE student member