

# Khaldoon Dhou, PhD

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Texas A&M University – Central Texas  
 College of Business Administration  
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## Education

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- **Postdoctoral Fellow in Data Science and Business Analytics (Jan 2014 – May 2014)**, NC Complex Systems Institute, Charlotte, NC
- **PhD in Computing and Information Systems, (Dec 2013)** University of North Carolina at Charlotte, Charlotte, NC
  - **Concentrations:** Information visualization, perception, psychophysics, hypnosis
  - **Dissertation Title:** “*Toward a Better Understanding of Viewers’ Perceptions of Tag Clouds: Relative Size Judgment*”
- **PhD in Computer Science, (Aug 2008 – Aug 2009)** Virginia Commonwealth University, Richmond, VA (Did one year and transferred to UNC Charlotte)
- **MSc in Computer Science, (Jul 2007)**, University of Northern British Columbia, Prince George, BC
  - **Concentrations:** Image Processing and Human Computer Interaction
  - **Research Project:** *Chess Software and its Impact on Chess Players*

## Employment

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- **Assistant Professor of Computer Information Systems, Texas A&M University Central Texas, Killeen, TX 76549**  
**Jun 2020 – Now**
  - **Teaching**
    - CIS 3303 – Programming Logic and Design
    - CIS 3306 – Data Visualization
    - CIS 3315 – Web Site Dev and Design
    - CIS 3330 – C++ Programming
    - CIS 3331 – Visual Basic Programming
    - CIS 3340 – Advanced C++ Programming
    - CIS 3343 – C# for Windows and Web Programming

- CIS 4310 – Artificial Intelligence
- CIS 4379 – Software Engineering with E-Business
- CIS 5380 – E-Business Development
- CIS 5382 – Research Methods

➤ **Visiting Assistant Professor, Breech School of Business, Drury University, Springfield, MO, 65802**

**Aug 2018 – May 2020**

- **Teaching**
  - MGMT 103 – Business Foundations (online and seated)
  - MGMT 250 – Management Information Systems (online and seated)
  - MBA 662 – Strategic Advantage Through Technology and Information
- **Advising**
- **Research**
  - Applying biological concepts and swarm behavior in multimedia processing. This includes the concept of biological reproduction, beavers' behavior, ant colonies and agent-based modeling
  - Utilizing virtual humans to explore many aspects on personalities
  - Investigating different aspects on perception of different visualizations

➤ **Visiting Assistant Professor, University of Missouri St. Louis, St. Louis, MO**

**August 2017 – Aug 2018**

- **Teaching**
  - CS 1250 – Introduction to Computing
  - CS 2261 – Object Oriented Programming
  - CS 2270 – Computer Organization and Architecture
  - CS 4610 – Database Management Systems
- **Research**
  - Investigating the concept of biological pheromones in ant colonies among other concepts used by ants and utilize them in image compression
  - Exploring different chess personalities via the employment of different virtual personalities. This includes the personalities of attacking and defensive grandmasters and how they perform against less-skilled players who have different skills

➤ **CIS Faculty, East Coast Polytechnic Institute, Newport News, VA 23606, USA**

**May 2014 – Jan 2016**

- **Teaching**
  - CIS 106 – Introduction to Operation Systems
  - CIS 126 – Programming I
  - CIS 203 – Code Design and Debugging
  - CIS 206 – Introduction to Linux
  - CIS 214 – Object-Oriented Programming Using C#
  - CIS 215 – Programming II
  - CIS 218 – Object-Oriented Programming Using JAVA
  - CIS 219 – Object-Oriented Programming Using Visual Basic .Net
  - CIS 224 – Server-Side Scripting
  - CIS 282 – Web Interface Design

- CIS 319 – Advanced Object-Oriented Programming Using Java
    - CIS 332 – Mobile App Development I
    - CIS 421 – Design Patterns
    - CIS 432 – Mobile App Development II
    - CIS 480 – Project VI
  - **Research**
    - Developing a system to visualize real time student feedback in a classroom environment. This includes collecting tweets from students and applying machine learning techniques to classify them and display them to the instructor
    - Designing different experiments to understand the rule of personalities in determining the errors made by chess players of different skills. This includes investigating games made by virtual grandmasters and other less skilled players.
  - **Subject Matter Expert**
    - Developing course curriculum for the Master’s program in cybersecurity at ECPI
    - Delivering an adult focused and responsive service for education
  - **Advising**
    - Teaching and supervising students in practical settings
    - Facilitating small and large groups and working across program delivery teams
- **Department of Software and Information Systems, University of North Carolina at Charlotte, Charlotte, NC, 28223, USA**
- **Lab Instructor, Aug 2013 – Dec 2013**
    - Courses: ITIS 1350 – eScience
      - Teaching eScience labs
      - Grading and evaluating assignments and projects
      - Assisting undergraduate students in their class projects
  - **Graduate Teaching Assistant, Jan 2013 – May 2013**
    - Courses: ITIS 3310 – Software Architecture and Design
      - Helping students in assignments and projects
      - Answering students questions
  - **Graduate Teaching Assistant, May 2010- Aug 2010**
    - Courses: ITCS 1101 – Introduction to Computer Concepts
    - ITCS 1212 – Introduction to Computer Science
    - ITCS 1215 – Introduction to Computer Science II
    - ITCS 2231 – Introduction to Business Programming
      - Helping students in assignments and projects
      - Grading homework and programming assignments
  - **Graduate Research Assistant, Aug 2009- Dec 2012**
    - Working on perception in in tag clouds.
    - Designing controlled user studies to measure perception of viewers

- Researching different characteristics of visualization
  - Analyzing results and writing reports
- **Department of Computer Science, Virginia Commonwealth University, Richmond, VA 23284, USA**
- **Graduate Teaching Assistant, Aug 2008- Aug 2009**
    - Courses: CMSC 246 – Advanced Programming Using C++
    - CMSC 401 – Algorithm Analysis with Advanced Data Structures
    - CMSC 519 – Software Engineering: Specification and Design
      - Grading homework assignments, exams and projects
      - Helping students in programming problems
      - Teaching labs
      - Supervising students during programming sessions.
- **Department of Computer Science, University of Northern British Columbia, Prince George, BC V2N4Z9, Canada**
- **Lab Instructor, Sep 2007- Dec 2007**
    - Courses: CPSC 110 – Introduction to Computer Systems and Programming
      - Teaching labs
      - Helping students understand with assignments and projects
      - Grading assignments, presentations and projects.
  - **Graduate Research Assistant, Sep 2007- Dec 2007**
    - Developing a new image compression algorithm using the chain code technique. My algorithm did outperform existing binary image compression algorithms including international standards of image compression
    - Researching different image compression algorithms
    - Researching the psychology of chess players
    - Analyzing 250 chess software application
    - Analyzing different chess training techniques offered by chess applications
  - **Marker, Jan 2007 - May 2007**
    - Courses: PHYS 115 – General Introduction to Physics
      - Marking all homework assignments and exams
  - **Graduate Teaching Assistant, Sep 2006 - May 2007**
    - Courses: CPSC 126 – Introduction to Computing
    - CPSC 200 – Algorithm Analysis and Development
    - CPSC 270 – Human Interface Design
    - CPSC 442 – Parallel Computing
      - Teaching labs
      - Helping students in assignments and projects
      - Preparing exams, grading assignments, presentations and projects
  - **Graduate Teaching Assistant, Sep 2005 - May 2006**
    - Courses: CPSC 101 – Computer Programming II
    - CPSC 200 – Algorithm Analysis and Development
      - Grading assignments and projects

- Designing exam questions and projects
- Teaching labs
- Helping undergraduate students  
[Nominated for the Graduate Teaching Excellence Award]

## Honors and Awards

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- Faculty Senate Scholarship Summit at Texas A&M University Central Texas
- Faculty Scholarship Award 2018-2019, Drury University
- Chess Champion for Open Tournament, Chess on the Square Event, Discovery Center of Springfield, Springfield, MO on Mar 6, 2020
- 2017 Information Visualization MOOC Badge, Indiana University, March 2017
- Graduate Assistant Support Plan from the University of North Carolina at Charlotte, Aug 2009 – Dec 2013: Full payment of in-state tuition, non-resident tuition, stipend and health insurance
- Scholarship and Assistantship from Virginia Commonwealth University, Aug 2008-Aug 2009: Full payment of tuition and a stipend
- Graduate Teaching Excellence Award, Apr 2006: College of Science and Management at the University of Northern British Columbia
- Distinguished Student Prize, April 2004: National prize sponsored by the Ministry of Higher Education and Research
- First Rank in the Department of Computer Engineering at Jordan University of Science and Technology, Fall 2003
- Sharjah Prize for Scientific Excellence and Educational Innovation, Nov 1999, UAE

## Professional Activities

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- **Chair**, MT5 session at the International Conference on Computational Science (ICCS 2021), Jun 16, 2021 from 16:30-18:10
- **Reviewer**, Ecological Modeling Journal
- **Reviewer**, Journal of Cultural Heritage Management and Sustainable Development
- **Reviewer**, Americas Conference on Information Systems (AMCIS 2021), Aug 9-13, 2021
- **Program Committee**, International Conference on Behavioral and Social Computing, Hamad Bin Khalifa University, Nov 9-11, 2021
- **Program Committee**, the Twelfth International Conference on Information and Communication Systems (ICICS 2021), May 24-26, 2021
- **Program Committee**, the 15<sup>th</sup> International Conference on the Interfaces and Human Computer Interaction (IHCI), Jul 21-23, 2021
- **Reviewer**, Engineering with Computers, 2021
- **Reviewer**, Mathematical Biosciences and Engineering, 2021
- **Program Committee**, The 12th International Conference on Swarm Intelligence (ICSI'2021)
- **Reviewer**, Computers in Biology and Medicine, 2020

- **Reviewer**, Computer Methods and Programs in Biomedicine, 2020
- **Reviewer**, Journal of Computational Science, 2020
- **Program Committee**, The Eleventh International Conference on Swarm Intelligence (ICSI'2020)
- **Session Chair and Organizer**, 23<sup>rd</sup> International Conference on Human-Computer Interaction, Washington, DC, 24-29<sup>th</sup> July, 2021
- **Program Committee Member**, IEEE ETCI-2021 International Conference on Computational Intelligence, Mahindra University, Hyderabad, India, Aug 25-27, 2021
- **Program Board**, 23<sup>rd</sup> International Conference on Human-Computer Interaction, Washington, DC, 24-29<sup>th</sup> July, 2021
- **Program Committee**, 6th International Conference on Complexity, Future Information Systems and Risk (COMPLEXIS 2021), Prague, Czech Republic, April 24-25, 2021
- **Program Committee**, Interfaces and Human Computer Interaction (IHCI 2020) Conference, Zagreb, Croatia, Jul 23-25, 2020
- **Program Committee**, International Conference on Computational Science, Amsterdam, The Netherlands, Jun 3-5, 2020
- **Program Committee**, International Workshop on Domain-driven Data Mining, Cincinnati, OH, May 7-9 2020
- **Program Committee**, International Conference on Complexity, Future Information Systems and Risk, 2020
- **Board Member**, International Conference on Human Computer Interaction, Copenhagen, Denmark, 2020
- **Program Committee**, 1st International Conference on Visualization and Computer-Human Interaction (VisCHI), Doha, Qatar, Nov 25-26 2019
- **Reviewer**, 5<sup>th</sup> International Conference on Fuzzy Systems and Data Mining (FSDM 2019)
- **Reviewer**, 2<sup>nd</sup> International Conference on Numerical Modelling in Engineering (NME2019)
- **Program Committee**, 13<sup>th</sup> International Conference on Interfaces and Human Computer Interaction (IHCI 2019)
- **Reviewer**, IEEE Internet of Things Journal, 2019
- **Program Committee**, International Conference on Computational Science 2019 (Rank-A)
- **Program Committee**, Tenth International Conference on Swarm Intelligence 2019
- **Associate Editor**, International Journal of Entertainment Technology and Management
- **Editor**, Acta Scientific Medical Sciences journal, 2018-Now
- **Reviewer**, Information and Management, 2018
- **Reviewer**, Future Generation Computing Systems Journal, 2018-Now
- **Reviewer**, Indonesian Journal of Electrical Engineering and Computer Science
- **Reviewer**, 17<sup>th</sup> International Conference on E-health Networking, Application & Services (HealthCom 2015).
- **Reviewer**, Journal of Visual Languages and Computing (JVLC)
- **Reviewer**, International Journal of Recent Innovation Trends in Computing and Communication
- **Reviewer**, IEEE Transactions on Multimedia Journal

## Certificates

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- **Coursera Certificate**, Create a SWOT Analysis Using Google Docs, Mar 30, 2021
- **Certificate**, Writing Articles, LinkedIn Learning, Feb 12, 2021
- **Certificate**, Learn Emotional Intelligence, the Key Determiner of Success, LinkedIn Learning, Feb 13, 2021
- **Certificate**, Sit Less, Get Active, University of Edinburg, Jan 24, 2021
- **Certificate**, Coursera Administrator Training, Coursera, Jan 23, 2021
- **Course Certificate**, Successful Career Development, Kennesaw State University, Jan 10, 2021
- **Certificate of Completion**, How to Work Smarter, Not Harder: Save Time and Money and Increase Productivity, LinkedIn LEARNING, Jan 8, 2021
- **Certificate of Completion**, Market Research Foundations, LinkedIn Learning, Jan 7, 2021
- **Certificate**, Data Science Math Skills, Duke University, Jan 4, 2021
- **Course Certificate**, Mindshift: Break Through Obstacles to Learning and Discover Your Hidden Potential, McMaster University, Dec 29, 2020
- **Certificate of Completion**, Requirements Elicitation and Analysis, National Association of State Boards of Accountancy (NASBA), PMI® Registered Education Provider, and International Institute of Business Analysis (IIBA®), Dec 24, 2020
- **Certificate of Completion**, Marketing Analytics: Setting and Measuring KPIs, LinkedIn LEARNING, Nov 9, 2020
- **Certificate of Completion**, Gamification of Learning, LinkedIn LEARNING, Dec 23, 2020
- **Certificate of Completion**, Fundamentals of Dynamic Programming, LinkedIn LEARNING, Nov 5, 2020
- **Certificate of Completion**, Consulting Foundations: The Concept of Value, National Association of State Boards of Accountancy (NASBA). Dec 8, 2020
- **Certificate, Professional Virtual Event Planning**, Oct 2020, Whova Academy
- **Certificate, Marketing Analytics**, May 2020, University of Virginia
- **Certificate, Machine Learning for Business Professionals**, May 2020, Google Cloud
- **Certificate, Personal Branding**, April 2020, University of Virginia
- **Certificate of Outstanding Contribution in Reviewing**, Future Generation Computer Systems journal (5-Year Impact Factor: 5.670)

- **JAVA Tutorial Certificate, (Sep 2017)**, Solo Learn Inc., Pleasanton, CA
- **Certificate, Consumer Neuroscience and Neuromarketing (with distinction), Feb 2015**, Copenhagen Business School, Frederiksberg, Denmark
- **Certificate of Completion of ECPI Integrated Curriculum Development Training, (July 2014)** ECPI University, Newport News, VA 23606
- **Certificate of Completion of Georgia Southern Teacher Training, (July 2014)** ECPI University, Newport News, VA 23606
- **Certificate in Contraception, (Mar 2013)** University of California at San Francisco, San Francisco, CA 94143
- **Certificate in Clinical Hypnotherapy, (Dec 2012)** Hypnosis Motivation Institute, Tarzana, CA 91356

## Research interests

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- **Areas of research interest**
  - Information Visualization
  - Virtual humans and their employment in exploring personalities
  - Mobile learning for people with disabilities
  - Users' perception
  - Human Computer Interaction
  - Cognitive Psychology
  - Image Processing
  - Virtualization Security
  - Data Science and Business Analytics
  - Machine learning
  - Big Data
  - Bio-inspired computing
  - Gamification

## Scholarly work

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### Peer-reviewed journal publications

- **Dhou, K. & Cruzen, C. (2021).** 'A highly efficient chain code for compression using an agent-based modeling simulation of territories in biological beavers', *Future Generation Computer Systems*, 118, 1-13. (Acceptance Rate: 17%, 6.125 Impact Factor, our results could outperform international standard methods in data compression)
- **Dhou, K. (2021).** 'An exploration of chess personalities in grandmasters and class-A players using virtual humans,' *International Journal of Entertainment Technology and Management* (In Press)



- **Dhou, K.** (2020). ‘A new chain coding mechanism for compression stimulated by a virtual environment of a predator-prey ecosystem’, *Future Generation Computer Systems* 102, 650-669 (Acceptance rate: 17%, Impact Factor: 6.125, my results could outperform international standard methods in data compression)
- **Dhou, K., & Cruzen, C.** (2019). An innovative chain coding technique for compression based on the concept of biological reproduction: an agent-based modeling approach. *IEEE Internet of Things Journal*, 6(6), 9308-9315. (Acceptance Rate: 23%, 11.705 5-Year Impact Factor, our results could outperform international standard methods in data compression)
- **Dhou, K.** (2019). ‘An innovative design of a hybrid chain coding algorithm for bi-level image compression using an agent-based modeling approach’, *Applied Soft Computing* 79, 94-110. (Acceptance Rate: 17%, 5-Year Impact Factor: 5.472, my results could outperform international standard methods in data compression)
- **Dhou, K., Hadzikadic, M. & Faust, M.** (2018). ‘Typeface size and weight and word location influence on relative size judgments in tag clouds’, *Journal of Visual Languages & Computing* 44, 97-105.

#### **Peer-reviewed conference papers**

- **Dhou, K. & Cruzen, C.** (2021, Dec). An innovative employment of the NetLogo AIDS model in developing a new chain code for compression. In *International Conference on Computational Science 2021*. In press (Ranked A according to CORE, Acceptance rate: 31%)
- **Dhou, K.** (2021, July). An Exploration of the Fear of Attack Strategy in Chess and Its Influence on Class-A Players of Different Chess Personalities: An Exploration Using Virtual Humans. In *International Conference on Human-Computer Interaction* (pp. 185-195). Springer, Cham.
- **Dhou, K., & Cruzen, C.** (2020, December). A new chain code for bi-level image compression using an agent-based model of echolocation in dolphins. In *2020 IEEE 6th International Conference on Dependability in Sensor, Cloud and Big Data Systems and Application (DependSys)* (pp. 87-91). IEEE (Acceptance rate: 16%)
- **Dhou, K., Kosara, R., Hadzikadic, M, and Faust, M.** (2020). The influence of decorations and word appearances on the relative size judgments of words in tag clouds, in the 17th *International Conference on Modeling, Simulation and Visualization Methods (MSV'20)*, (Accepted, to appear)
- **Dhou, K.** (2020, July). A Novel Investigation of Attack Strategies via the Involvement of Virtual Humans: A User Study of Josh Waitzkin, a Virtual Chess Grandmaster. In *International Conference on Human-Computer Interaction* (pp. 658-668). Springer, Cham.

- Caci, B., & **Dhou, K.** (2020, July). The Interplay Between Artificial Intelligence and Users' Personalities: A New Scenario for Human-Computer Interaction in Gaming. In International Conference on Human-Computer Interaction (pp. 619-630). Springer, Cham.
- **Dhou, K.** (2019). An innovative employment of virtual humans to explore the chess personalities of Garry Kasparov and other class-A players, in 'HCI International 2019 – Late Breaking Papers', Springer International Publishing, Cham, pp. 306-319.
- **Dhou, K.** (2018). A novel agent-based modeling approach for image coding and lossless compression based on the wolf-sheep predation model, in 'Computational Science - ICCS 2018', Springer International Publishing, Cham, pp. 117-128. (Tier-1 conference, Acceptance rate of papers for presentation: 20%)
- **Dhou, K.** (2018). Towards a better understanding of chess players' personalities: A study using virtual chess players, in 'Human-Computer Interaction. Interaction Technologies', Springer International Publishing, Cham, pp. 435-446.
- Mouring, M., **Dhou, K.** & Hadzikadic, M. (2018). A Novel Algorithm for Bi-Level Image Coding and Lossless Compression based on Virtual Ant Colonies, in '3rd International Conference on Complexity, Future Information Systems and Risk', Setubal - Portugal, pp. 72-78. (NOTE: Our results could outperform international standard methods in data compression)
- Zahir, S. & **Dhou, K.** (2007). A new chain coding based method for binary image compression and reconstruction, in 'Picture Coding Symposium'.

### Peer-reviewed posters

- Altrabsheh, N., Cocea, M., Fallahkhair, S. & **Dhou, K.** (2017). Evaluation of the SA-E system for analysis of students' real-time feedback, in '2017 IEEE 17<sup>th</sup> International Conference on Advanced Learning Technologies (ICALT)', pp. 60-61.
- **Dhou, K. K.**, Kosara, R., Hadzikadic, M. & Faust, M. (2013). 'Size judgment and comparison in tag clouds', IEEE Visualization Poster Proceedings . [Tier-1 conference]
- **Dhou, K.**, Casperson, D., Kitchenham, A (2012). "Chess Software and its Impact on Chess Players", poster contest at UNC Charlotte

### Community service

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- **Committee Member, MS in Information Systems Self-Study and Program Review**
- **Circles of Excellence: Evaluating how courses can help a program goals and outcomes**
- **Hiring committee for the Assistant Professor of CIS position at TAMUCT**
- **RNL Assessment Interview for AACSB Accreditation**
- **Evaluator of written artifacts related to AACSB, Strategic Planning and Assessment efforts.**

- **Advisor of the Interdisciplinary Student Research and Collaboration Club at Drury University**
  - Helping students to identify topics for research
  - Advising students on how to work on projects from different disciplines
  - Introducing students to academic writing
  - Assisting students in the publication process
  - Identifying the strength points of students and helping them in sharpening them
- **Experiential Learning Grants Committee**
  - Designing policies on how to distribute research funds to undergraduate students
  - Advising students on researching topics to apply for grants
- **Advisor of Software Development Club at East Coast Polytechnic Institute, Aug 2014 – Jan 2016**
  - Guiding students on projects' selection, providing technical help, guiding students in extra resources of learning depending on their interests, introducing students from different fields to the field of software development
  - Helping undergraduate student in the publication process and in obtaining funds for their research
- **President of Chess Club at the University of Northern British Columbia, Sep 2005 - July 2007**
  - Holding meetings of chess club
  - Managing chess tournaments
  - Helping students in chess if needed

## Conferences and workshops

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- The 16th International Conference on Persuasive Technologies from Monday, 12 April 2021 at 09:00 - Wednesday, 14 April 2021 at 22:00 (BST)
- East Texas Regional Workshop, Mar 10, 2021 from 1:00-4:00 PM
- Microsoft Azure Virtual Training Day: AI Fundamentals by Microsoft, Feb 24, 2021 from 11-2:45 CST
- Advancing Understanding of Terrestrial-Aquatic and Marine Interfaces with DOE National Labs, Feb 18, 2021 from 2:00-4:00 PM CST
- The 6th IEEE International Conference on Dependability in Sensor, Cloud, and Big Data Systems and Applications, Dec 14-16, 2020
- IEEE VIS 2020, Oct 25-30, 2020
- DoE Early Career Research Program Workshop, Texas A&M University, Sep 16, 2020
- Neo4j Connections: Graphs in Government Digital Conference, Online, Sep 15, 2020
- The 2020 World Congress in Computer Science, Computer Engineering, & Applied Computing, Las Vegas, NV, Jul 27-30, 2020
- The 22<sup>nd</sup> International Conference on Human Computer Interaction, Copenhagen, Denmark, 2020
- ProductCon Online: The Product Management Conference, Product School, Nov 5, 2020
- Whova Virtual Conference, Oct 2020
- Neo4j Online Developer Expo and Summit, Oct 20, 2020
- Transformative Manufacturing Workshop, University of New Hampshire, Oct 15, 2020
- Empowered Educator Online Conference, Cengage Publishing, Oct 13-14, 2020
- The 21<sup>st</sup> International Conference on Human Computer Interaction, Orlando, FL, 2019

- MBA Summer Workshop, Drury University, Springfield, MO, Jun, 2018
- 20<sup>th</sup> International Conference on Human Computer Interaction, Las Vegas, 2018
- 3<sup>rd</sup> International Conference on Complexity, Future Information Systems and Risk, Funchal, Madeira, Portugal, 2018
- In International Conference on Computational Science, Wuxi, China, 2018
- Focus on Teaching and Technology Conference, St. Louis, MO, 2017
- Apple Development Bootcamp, Reston, VA, October 2015
- IEEE Vis Conference, Atlanta, GA, 2013
- IEEE Vis Conference, Providence, RI, 2011
- IEEE Symposium on Signal Processing and Information Technology (ISSPIT), Vancouver, BC, 2006

## References

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Available upon request