

Rania A. Hodhod
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HIGHLIGHTS

- Ph.D. in Computer Science (Artificial Intelligence), University of York, UK
- Professor of Computer Science, Aug. 2023 - present
- Chair of TSYS School of Computer Science, Jan. 2024 - present
- USG Chancellor's Learning Scholar, Sep. 2018-Sep. 2020
- Postdoctoral Research Fellow at Georgia Tech, USA, 2011-2013
- Certified PEGA Systems Business Architect and System Architect (CBA and CSA), US (2016).
- QM Master Reviewer (2021)
- Online Course Accessibility Champion (2019)
- QM Peer Reviewer (2015)
- Certificate in personalized e-Learning. National College of Ireland, Dublin (2006).
- Diploma in Tutoring in On-Line Learning Environment. Aalborg University, Denmark (2006).
- Educational Consultant for the Information Computer Technology Curriculum for K-12 on the Nile Egyptian Schools Collaborative Project between the Egyptian government and Cambridge University in England (2010-2013).
- Experience in user-centered design for educational games, cognitive science, intelligent tutoring systems, computational intelligence, cognitive modeling, user modeling, adaptive systems, machine learning, programming languages, web development, expert systems, human-computer interaction, mobile applications, crowdsourcing, and research methods.
- Programming in Python, HTML, C#, Java, JavaScript, and Prolog.
- Reviewed 10 courses for QM Certification.
- My current online courses are QM certified.
- 20+ years of teaching experience.

AWARDS & HONORS

- CSU Service Award, 2023
- CSU Chapel Graduate Award, 2022
- College Graduate Teaching Award, 2021
- Faculty Mentoring Award from the Mathematics and Computer Sciences Division of the Council on Undergraduate Research (CUR), 2021.
- Outstanding Faculty in International Education, Delta Nu Chapter, Phi Beta Delta Honor Society, 2020.
- CSU International Educator of the Year, 2020.
- Nominee for the Regents Teaching Award for Excellence in Teaching, 2019.
- CSU Teaching Excellence Award, 2019
- USG Chancellor's Learning Scholar, 2018-2020
- Phi Beta Delta Honor Society for International Scholars, 2018

- Nominee for the Regents Scholarship of Teaching and Learning Award, 2017 and 2018
- CSU Scholarship of Teaching and Learning Award, 2017
- CSU Research and Scholarship Award, 2016
- LEAD CSU Fellowship, 2016
- Phi Kappa Phi Honor Society membership, 2016
- Finalist for the Faculty Research and Scholarships Award at CSU, 2016
- Online Course Accessibility Champion: Supportive Inclusive Practices (SIP) and Developing Inclusive Practices (DIP), 2017

MEMBERSHIP

- Member of Phi Beta Delta Honor Society for International Scholars
- Member of Delta Nu Chapter, Phi Beta Delta Honor Society
- Member of International Game Developers Association (IGDA)
- Member of The Society for the Study of Artificial Intelligence and the Simulation of Behaviour
- Member of the National Centre for Women and Information Technology (NCWIT)
- Member of the Association for Computing Machinery (ACM)

ACADEMIC SERVICE

- Reviewer for Humanities and Social Sciences Communications (2021).
- Reviewer for the International Conference on Computational Techniques and Applications (ICCTA 2021)
- Reviewer for Journal of Educational Computing Research (2021).
- Reviewer for IEEE International Conference on Fuzzy Systems (Fuzz-IEEE 2020).
- Reviewer and program committee member for HCI International 2019, and IEEE HCC 2019.
- Reviewer and program committee member for the Arab Informatics Conference of Oncology (AICO 2020).
- Reviewer and program committee member, IEEE Conference on Computational Intelligence and Games (CIG 2018, CIG 2013, CIG 2014, CIG 2015, CIG 2016, 2017, CIG 2018).
- Reviewer and program committee member, Conference on Advanced Intelligent Systems and Informatics (AIS 2017).
- Committee member, AAAI Conference - Artificial Intelligence and Interactive Digital Environments (AIIDE 2013, AIIDE 2014, AIIDE 2015, AIIDE 2019, AIIDE 2020, AIIDE 2021).
- Reviewer and program committee member, Intelligent Narrative Technologies 7 (INT 7) (2014).
- Reviewer and program committee member, FLAIRS-24 (2011).
- Reviewer, Entertainment Computer Journal, Elsevier (2010).
- I have been serving on the Editorial Board for Electronics Journal since 2020.
- I have been serving on the Topical Advisory Panel for Electronics Journal since 2021.
- I served as the Program Director for the 1st International Conference on Computing and Emerging Sciences in 2020 (ICCES'20).
- I served on the program committee for the 1st Arab Informatics Conference in Oncology (AICO 2020) conference.
- I completed the MOU between CSU and Arab Academy in Egypt in 2019.
- I initiated an internship program with Teikyo University for CS students in 2020.

PROFESSIONAL GROWTH AND DEVELOPMENT

- 90+ professional development activities/workshops were attended since 2013 including design thinking, designing transparent assignments, accessibility in course design, and how to allow for an inclusive classroom

TEACHING EXPERIENCE

- Fall 2013-present: 100+courses including 10 independent study courses, 5 internships, 3 study abroad programs, and 19 research and thesis courses resulted in 9 published theses, and content-based courses

CURRENT FIELDS OF INTEREST

- Computer Science: serious games; cognitive science; intelligent tutoring systems, computational intelligence; cognitive modeling; user modeling; adaptive systems; machine learning, expert systems; research methods.
- Computer science education: Faculty development workshops and communities; undergraduate and graduate research; conducting school teachers workshops.

GRANTS

- Co-PI with Yi Zhou (PI), and Kristin Lilly. Smart Course Advising Tool: A Smart Class Planning Tool for Academic Advising (Fall 2022).
- Co-PI with Linqiang Ge (PI), Anastasia Angelopoulou, Suk Lee, Yi Zhou. Text Transformation Grant. Amount \$25,000 awarded (Fall 2021).
- Co-PI with Jennifer Lovelace. Designing and Developing a Collaborative Research Platform for Faculty and Students". Amount: \$2300 awarded (Fall 2021)
- PI with Anastasia Angelopoulou and Kristin Lilly. "Use of Visualization to Teach Freshmen and Sophomores about Accessibility Measures". Amount: \$3000 awarded (Fall 2021)
- Co-PI with Lydia Ray. University Grant, "Automatic Detection of Fake News and Conspiracy Theories Using Artificial Intelligence and Natural Language Processing". Amount: \$2,480 awarded (Spring 2021)
- Co-PI with Nehal Shukla. Interdisciplinary Initiative Grant, "Mathematical Modeling and Machine Learning for non-invasive Diagnosis of Liver Fibrosis in Chronic Hepatitis C". Amount: \$3,500 awarded (Fall 2020).
- Co-PI with Lydia Ray (PI), Yesem Peker, Hyrum Carroll, Alfredo Perez, Japheth Koach. Text Transformation Grant. Amount \$30,000 awarded (Summer 2019).
- Co-PI with Brandt Smith. Innovation in Scholarship and Research Seed Grant: Bounds of rationality: Evolution of Trust in Imperfect Knowledge Conditions. Amount \$2,700 awarded (Spring 2019).
- PI with Brandt Smith (co-PI), Interdisciplinary Initiative Grant, Bounds of Rationality. Amount: \$3000 awarded (Fall 2018).
- Co-PI with Alfredo Perez, Yesem Peker, and Hillary Fleenor. A STEM Mini-Grant from CSU to provide computer science workshops to local K-12 teachers. Amount: \$2,653 awarded (Spring 2018).
- PI with Shamim Khan (co-PI) and Shuangboa Wang (co-PI), viCyber: A Visual and Intelligent Tool for Rapid Cybersecurity Curriculum Development. National Security Agency (NSA), Amount: \$174,142.86 awarded (Summer 2017)

LIST OF RECENT PUBLICATIONS

Book Chapters

- Harlie Hardage and Rania Hodhod. The Impact of Learning Theories in Cybersecurity Education, a chapter in "Understanding the Different Types of Learning Theories". Publisher: Nova Science Publishers, 2021.
- Ahmed Mostafa, Yi Zhou, and Rania Hodhod. Improving Energy-Efficient through Smart Data Placement in Hadoop Clusters, a chapter in "Advances in Computer Science Research". Publisher: Nova Science Publishers, 2020.
- Fatma Gamal, Hillary Fleenor, and Rania Hodhod. Data Analytics to Improve Student Success and Retention, a chapter in Advances in Computer Science Research. Publisher: Nova Science Publishers, 2020.
- Hillary Fleenor and Rania Hodhod. Assessment of Learning and Technology: Computer Science Education, a chapter in "Handbook of Research on Learning Outcomes and Opportunities in the Digital Age". Eds: Victor Wang, Publisher: IGI Global, 2015.

Peer-Reviewed Journals

- Rania Hodhod, Harlie Hardage, Safia Abbas and Eman Abdullah Aldakheel. CyberHero: An Adaptive Serious Game to Promote Cybersecurity Awareness. *Electronics*, 12 (17), p. 3544, 2023 (Q2).
- Jamjoom, M., Ahmed, N., Abbas, S., Hodhod, R., El-Sheikh, M., & Ullah, Z. A Novel Approach for Contextual Clustering and Retrieval of Behavior Trees to Enrich the Behavior of Social Intelligent Agents. *Electronics*, 12(4), p. 970, 2023 (Q2).
- Mona Jamjoom, Abeer Mahmoud, Safia Abbas, and Rania Hodhod. Gaussian Mixture with Max Expectation Guide for Stacked Architecture of Denoising Autoencoder and DRBM for Medical Chest Scans and Disease Identification. *Electronics Journal*, 2023 (Q2).
- Anastasia Angelopoulou, Rania Hodhod, and Kristin Lilly. Introducing Accessible Design to Students in Computer Science. *JPED's Special Issue: Integrating disability, accessibility, and/or universal design content within postsecondary courses*, 2022 (Q1).
- Nehal Shukla, Anastasia Angelopoulou, and Rania Hodhod. Non-Invasive Diagnosis of Liver Fibrosis in Chronic Hepatitis C using Mathematical Modeling and Simulation. *Electronics Journal* as part of the Special Issue Modeling and Simulation Methods, 2022. 11(8), p.1260. [Impact Factor: 2.397] (Q2).
- Tamilarasan Ananth Kumar, Rajendrane Rajmohan, Muthu Pavithra, Sunday Adeola Ajagbe, Rania Hodhod, and Tarek Gaber. Automatic Face Mask Detection System in Public Transportation in Smart Cities Using IoT and Deep Learning. *Electronics Journal*, 2022. 11(6), p.904. [Impact factor: 3.02] (Q2).
- Anastasia Angelopoulou, Alfredo Perez, and Rania Hodhod. Factors affecting student educational choices regarding OER material in Computer Science, *Journal of Computers in Education*, Springer Nature, 2022. p. 1-27. [Impact factor: 0.45] (Q2).
- Safia Abbas, Rania Hodhod, and Mohamed El-Sheikh. Retrieval of behavior trees using map-and-reduce technique. *Egyptian Informatics Journal*, June 2021 [Impact factor: 4] (Q2)
- Yaojie Li, Johnny Ho, Rania Hodhod, Jennifer Pitts, and John Finley. "Participative and practical goal-setting in enterprise systems learning. *Journal of Computer Information Systems*, 2021 [Impact Factor: 3.4] (Q1)

- Yasser Omar, Rania Hodhod, and Mohamed elSheikh. GLAUDIA: A Predictive System for Glaucoma Diagnosis in Mass Scanning. *Health Informatics Journal*, 2021. [Impact factor:1.833 , SJR H index:37 (Q2)].
- Hend S. Salem, Rania Hodhod, Ghada S. El-Tawel and Hany F. ElYamany. Service-based Architecture for SLA Management in Cloud Computing. *International Journal of Computer Applications (IJCA)*, 2020. [Impact factor: 0.249, SJR H index:13] (Q4).
- Ahmed Maghawry, Mohamed Kholeif, Yasser Omar, and Rania Hodhod. An Approach for Optimizing Multi-objective Problems using Hybrid Genetic Algorithms. *Soft Computing Journal*, Springer, 2020 [Impact factor: 3.140, SJR H index: 64] (Q2).
- Ahmed Maghawry, Mohamed Kholeif, Yasser Omar, and Rania Hodhod. An Approach for Evolving Transformation Sequences using Hybrid Genetic Algorithms. *International Journal of Computational Intelligent Systems (IJCIS)*, 13(1), 2020. [Impact factor: 2.153, SJR H index: 36] (Q1)
- Ahmed Maghawry, Mohamed Kholeif, Yasser Omar, and Rania Hodhod. A Survey on Program Analysis and Transformation. In proceedings of 3rd Computational Methods in Systems and Software, Vol. 2. Published in the Springer Series: Advances in Intelligent Systems and Computing, 2019 (Q3 - Listed by SJR – H Index 25).
- Ahmed Almougi, Yasser Omar, and Rania Hodhod. An Evaluation Model for Auto-generated Cognitive Scripts. *International Journal of Advanced Computer Science and Applications (IJACSA)*, 10(8), pp. 333-340, 2019. [Impact factor: 1.324, SJR H index: 3] (Q4)
- Rania Hodhod, Shuangbao Wang, and Shamim Khan. CyberMaster: An Expert System to Guide the Development of Cybersecurity Curricula. *International Journal of Online Engineering (iJOE)*, 15(3), 2019. [Impact factor: 0.3] (Q3)
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- Rania Hodhod, Shuangbao Wang, and Shamim Khan. Cybersecurity Curriculum Development using AI and Decision Support Expert System. *International Journal of Computer Theory and Engineering (IJCTE)*, 10(4) 2018.
- Heath McCormick and Rania Hodhod. Using Regression Tools to Assess Hazard Identification in the U.S. Army Risk Management process. *International Journal of Computing Academic Research (IJCAR)*, 4(3) 2015 [Impact factor 0.453]
- Charles Karels, Heath McCormick, and Rania Hodhod. Application of Fuzzy Expert Systems in Assessing Risk Management in the US Army. *International Journal of Computer Applications (IJCA)*, 113(6) 2015. [Impact factor 0.715]
- Rania Hodhod and Brian Magerko. Computational Creativity: Improv Agents and Conceptual Blending. *International Journal of Cognitive Informatics and Natural Intelligence (IJCINI)*, 8(2), IGI Global, 2014 [Impact factor 0.86]
- Rania Hodhod, Brian Magerko, and Mohamed Gawish. Pharaoh: Context-Based Structural Retrieval of Cognitive Scripts. *International Journal of Information Retrieval Research*, 2(3), IGI Global, 2013. [Impact Factor: 0.6]
- Safia Abbass, and Rania Hodhod, Cultivating Intelligent Tutoring Cognizing Agents in Ill-Defined domains Using Hybrid Approaches. *Egyptian Computer Science Journal*, 37(1), pp. 66-81, 2013.

Panel Sessions

- Rania Hodhod, Shuangbao Wang, and Shamim Khan. viCyber: An AI Assistant to Create Cybersecurity Courses. Growing the Cybersecurity Workforce track at the NICE Conference and Expo. 2018.

- Yesem Peker, Lydia Ray, Rania Hodhod, and Shamim Khan. Computing in the Classroom: A Workshop for Teachers to Infuse Computational Thinking in K-12 Classrooms. In proceedings of SIGSCE 2015. [Category: A]

Refereed Conference Papers

- Esalm Khaled, Rania Hodhod and Yaser Omar. Towards an Enhanced Model for Contextual Topic Identification. In the Proceeding of the 5th Novel Intelligent and Leading Emerging Sciences Conference (NILES), 2023.
- Maghawry A., Hodhod R., Omar Y., Kholief M. A Survey on Supporting the Software Engineering Process Using Artificial Intelligence. In: Silhavy R. (eds) Software Engineering and Algorithms. CSOC 2021. Lecture Notes in Networks and Systems, vol 230, 2021 Springer, Cham. https://doi.org/10.1007/978-3-030-77442-4_6
- Maghawry A., Hodhod R., Omar Y., Kholief M. An Approach to Optimize Multi-objective Problems Using Hybrid Genetic Algorithms Supported by Initial Centroid Selection Optimization Enhanced K-Means Based Selection Operator. In: Silhavy R. (eds) Artificial Intelligence in Intelligent Systems. CSOC 2021. Lecture Notes in Networks and Systems, vol 229, 2021. Springer, Cham. https://doi.org/10.1007/978-3-030-77445-5_7
- Omar Abdelaziz, Sahana Deb, Rania Hodhod, and Lydia Ray. A Novel Phishing Email Detection Algorithm based on Multinomial Naiive Bayes Classifier and Natural Language Processing. In Proceedings of 1st International Conference on Computing and Emerging Sciences (ICCES), 2020.
- Angie Dowdell, Andy Brou, and Rania Hodhod, Improving Assessments using Intelligent Agents with Transient Emotional States. In Proceedings of Interservice/Industry Training, Simulation and Education Conference (I/ITSEC), 2019.
- Ahmed Maghawry, Mohamed Kholeif, Yasser Omar, and Rania Hodhod. A Survey on Program Analysis and Transformation. In proceedings of 3rd Computational Methods in Systems and Software, Springer Series: Advances in Intelligent Systems and Computing, 2019 (Q3).
- Yaojie Li, Johnny Ho, John Finley, Jennifer Pitts, and Rania Hodhod. The Role of Participative and Practical Goal-Setting in MIS Students Learning and Performance: A Case of Penguinsystems' University Alliance Program. Proceedings of ACM SIGMIS Computers and People Research (CPR) conference, 2019.
- Lavi Zamstein, Brandt Smith, and Rania Hodhod. A Comparative Study of Opponent Type Effects on Speed of Learning for an Adversarial Q-Learning. In Proceedings of IEEE SoutheastCon, 2019.
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- Mohammed A. El-Jawad, Yasser Omar, Rania Hodhod. Sentiment Analysis of Social Media Networks Using Machine Learning. Proceedings of the 14th International Computer Engineering Conference (ICENCO), IEEE Xplore, 2018 (SJR H index: 0.13).
- Amr Adel, Yasser Omar, Rania Hodhod. An Innovative Word Encoding Method for Text Classification Using Convolutional Neural Network. Proceedings of the 14th International Computer Engineering Conference (ICENCO), IEEE Xplore, 2018 (SJR H index: 0.13).
- Shamim Khan, Shuangbao Wang, and Rania Hodhod. viCyber: An Intelligent Curriculum Design Tool for Cybersecurity Education. (poster) SIGCSE 2018 [Category: A]
- Javier Livio, Wilfredo Flores, Rania Hodhod, and David Umphress. Smart Fuzzy Cupper: Employing approximate reasoning to derive coffee bean quality scoring from individual attributes. Proceedings of IEEE International Conference on Fuzzy Systems (FUZZ-IEEE) 2018 [Category: A].

- Rania Hodhod and Hillary Fleenor. A Text Mining Based Literature Analysis for Learning Theories and Computer Science Education. Proceedings of the 3rd International Conference on Advanced Intelligent Systems and Informatics (AISII), Springer, 2017.
- Hillary Fleenor, Randy Brou, and Rania Hodhod. Improving Assessment with Text Mining. In Proceedings of Interservice/Industry Training, Simulation and Education Conference (I/ITSEC), 2017.
- Rania Hodhod, Shamim Khan, Yesem Peker, Lydia Ray. Training Teachers to Integrate Computational Thinking into K-12 Teaching. In proceedings of SIGSCE 2016 [Category: A]
- Rania Hodhod and Brian Magerko. Closing the Cognitive Gap between Humans and Interactive Narrative Agents Using Shared Mental Models. ACM International Conference on Intelligent Interfaces (IUI 2016) [Category: A]
- Yesem Peker, Lydia Ray, Rania Hodhod, and Shamim Khan. Computing in the Classroom: A Workshop for Teachers to Infuse Computational Thinking in K-12 Classrooms. In Proceedings of SIGCSE 2015. [Category: A]
- Rania Hodhod, Marc Huet, and Mark Riedl, Toward Generating 3D Games with the Help of Common-Sense Knowledge and the Crowd. Proceedings of the EXAG workshop held at the Tenth Annual AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE2014), North Carolina, USA, 2014. [Category: A]
- Rania Hodhod, Hillary Fleenor, and Syedali Nabi. Adaptive Augmented Reality Serious Game to Foster Problem Solving Skills. In Proceedings of HyperRealitIE'14 workshop held at the 10th International Conference on Intelligent Environments (IE'14), Shanghai, China, 2014.
- Rania Hodhod, and Brian Magerko. Pharaoh: Conceptual Blending of Cognitive Scripts for Computationally Creative Agents. In Proceedings of FLAIRS-27, Florida, USA, 2014.
- Mohammed F. Audi, Rania A. Hodhod, and Abdel-Badeeh M. Salem. An AI Approach to Transform the E-Patient Records into Clinical Cases for Medical Diagnostic Systems, 8th Annual International Conference on Information Technology & Computer Science, Athens, Greece, 2013.
- Mohammed F. Audi, Rania A. Hodhod, and Abdel-Badeeh M. Salem. Electronic Medical Records. 1st International Conference for Computing & Informatics (ICCI 2012), Cairo, Egypt Dec.11-12, 2013.

Published Theses

- [1] Harlie Hardage. CyberHero: A serious game for Cybersecurity Training (Spring 2022)
- [2] Ahmed Maghawry, Ph.D. Program analysis and transformation (Fall 2021).
- [3] Omar Abdelaziz. An ensemble model to detect phishing emails using machine and deep Learning (Summer 2021)
- [4] Ahmed Almoughi. An evaluation model for auto-generated scripts (Spring 2020).
- [5] Angie Dowdell. Creating a model for conversational intelligent agents with transient emotional states (Spring 2019)
- [6] Amr Adel Amr. A multilingual encoding method for text classification and dialect identification using convolutional neural networks (Fall 2018).

- [7] Mohammed Abd el-Jawad. Sentiment analysis of social media networks using machine learning (Fall 2018).
- [8] Priyanka Ahuja. AI planning assistant for scheduling daily activities, 2018.
- [9] Praneetha Mandava. A comparative study of cognitive systems for learning, 2017.
- [10] Javier Livio. Fuzzy expert systems: A more human-based approach for sensorial evaluation of coffee-bean attributes to derive quality scoring, 2017.
- [11] Andrew Dugger. A Step towards an Intelligent Digital Training Management System (I-DTMS), 2016.
- [12] Hillary Fleenor. Text Mining to explore the use of learning theories in data structures education literature, 2016.
- [13] Heath McCormick. Using K-Nearest Neighbor Algorithm and Logistic Regression to assess hazard identification in the U.S. Army Risk Management Process, 2015.
- [14] Charles Karels. Using a fuzzy expert system to examine hazard analysis in the United States Army, 2015.
- [15] Wang Zhang. An adaptive educational game to help students learn how to solve systems of linear equations, 2014.