**A blue and orange design

Description automatically generatedA blue and orange design

Description automatically generatedIslam Akef Ebeid**

A black and white text

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Assistant Professor of Computer Science at Texas Woman’s University

A person in a suit and tie

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[Home](https://iebeid.github.io/) [Google Scholar](https://scholar.google.com/citations?user=Qwm3Py8AAAAJ&hl=en) [ResearchGate](https://www.researchgate.net/profile/Islam-Ebeid) [Web of Science](https://www.webofscience.com/wos/author/record/GLQ-8040-2022) [Old Projects](https://iebeid.github.io/tinkering.html) [Github](https://github.com/iebeid) [Medium](https://medium.com/@ebeid)

Home Research Teaching Service Community Media CV

[iaebeid@ualr.edu](mailto:iaebeid@ualr.edu)

940-898-2166

Texas Woman’s University

MCL 402

Denton, TX 76204

I recently graduated with a Ph.D. in Computer and Information Science focusing on Data and Information Science at the University of Arkansas at Little Rock. I worked with the guidance and mentorship of John Talburt and Elizabeth Pierce.

Other mentors I worked with in the past years: Serdar Bozdag, Mariofanna Milanova, Ningnig Wu, Ying Ding, Yan Zhang, Jacek Gwizdka, Abhra Sarkar, Carolina Cruz Neira, Dirk Reiners, Roger Fang, Jerry Wood, Larry Morell.

# **Research Interests**

I am interested in data science and its applications in information science—especially data mining in networks, information retrieval in digital libraries, biomedical and health informatics and human-computer interaction.

Research specializations:

1. Entity resolution and matching with graph theory.
2. Biomedical information retrieval with graph representation learning
3. Human factors in computing with eye tracking

Research goals:

1. To explore new methods for integrating, enriching, and mining digital libraries, scientific literature, knowledge graphs, and information networks to automate hypothesis generation.
2. To present novel algorithms for analyzing eye-tracking data combining them with mixed methods in experimental design.

Broad fields of interest:

1. **Information Science** (information extraction, information retrieval, data integration, bibliographic network analysis)
2. **Network Science** (graph theory, graph neural networks, graph representation learning)
3. **Health Informatics** (biomedical text mining, biomedical scientific visualization, health information seeking)
4. **Computational Humanities** (human-computer interaction, digital libraries, computational social science)

My current skillset (Python, C\C++, Java, SQL):

1. Graph theory and network mining algorithms
2. Natural language processing algorithms
3. Experimental design and statistical analysis in eye-tracking studies (iMotions)
4. Machine learning and deep learning models and experiments (Tensorflow)

My older skillset:

1. Image processing with OpenCV, mainly for filtering, localization, and mapping
2. Computer graphics with OpenGL and WebGL for creating scientific visualizations.
3. Software engineering and database, especially web applications and services based on the MVC design pattern and various backend ETL operations.

# **Mission**

To contribute meaningfully to the literature on graph-based information retrieval in scientific digital libraries, data integration and entity resolution in databases, and eye-tracking data analysis for human-computer interaction.

To promote the collaboration between data science and the humanities, especially psychology, education, social science, and art.

To empower marginalized groups in computer science, like women and low-income populations, to help reduce the education gap.

To help integrate refugees through education via evidence-based and interdisciplinary methods.

# **Education**

University of Arkansas at Little Rock, Little Rock, Arkansas (2014-2022)

MSc, Ph.D. in Computer & Information Science (GPA: 3.66)

University of Texas at Austin, Austin, Texas (2017-2020)

Graduate work at the Ph.D. program in Information Science (GPA: 3.87)

Arkansas Tech University, Russellville, Arkansas (2011-2013)

Professional MSc in Computer & Information Science (GPA: 3.92)

Ain Shams University, Cairo, Egypt (2003-2008)

BSc in Electrical & Computer Engineering

Certifications: FE, ITIL

# **Positions Held**

Assistant Professor of Computer Science, Southern Arkansas University, Magnolia, Arkansas (2023-Current)

Postdoctoral Research Associate, Department of Computer Science & Engineering, University of North Texas, Denton, Texas, Funded by the NIH (2022-2023)

Research Assistant, Department of Information Science, University of Arkansas at Little Rock, Funded by the NSF (2021-2022)

Data Science Research Intern, AbbVie Inc., Urbana-Champaign, Illinois (2020)

Teaching Assistant, School of Information, The University of Texas at Austin (2019-2020)

Research Assistant, School of Information, The University of Texas at Austin, Funded by Lockheed Martin Inc. & the ALA (2018-2019)

Research Assistant, Texas Advanced Computing Center, The University of Texas at Austin, Funded by Intel Corporation (2018)

Research Fellow, School of Information, The University of Texas at Austin (2017-2018)

Software Engineering Intern, Intel Corporation, Santa Clara, California (2016-2017)

Research Assistant, Emerging Analytics Center, University of Arkansas at Little Rock (2014-2017)

Software Developer, Arkansas.gov/National Information Consortium Inc., Little Rock, Arkansas (2013-2014)

Graduate Assistant, International, & Multicultural Student Services Office, Arkansas Tech University (2012)

Graduate Assistant, Department of Computer & Information Science, Arkansas Tech University (2011-2013)

Software Developer, WeDo Technologies, Cairo, Egypt (2010-2011)

Software Developer, Orange Telecom, Cairo, Egypt (2009-2010)

Software Developer, Xpress Integration, Cairo, Egypt (2009)

Electronics Engineer, Hanna Instruments, Cairo, Egypt (2008)

Software Engineering Intern, Giza Systems, Cairo, Egypt (2007-2008)

Software Engineering Intern, Vodafone, Cairo, Egypt (2005-2006)

# **Honors & Awards**

Outstanding Doctoral Graduate, University of Arkansas at Little Rock (2022)

The Graduate School Professional Development Award, The University of Texas at Austin (2019)

Best Short Paper Award, ACM SIGCHI Symposium on Eye Tracking Research (2019)

The Graduate Recruitment Fellowship Award, The University of Texas at Austin (2017)

Distinctive Capstone Project, Ain Shams University (2008)

# **Funding & Grants**

Assisted with 1 NIH grant proposal during my postdoctoral training at the University of North Texas titled: Data-driven drug discovery for Alzheimer’s disease using graph representation learning, PI: Serdar Bozdag, August (2022)

# **Scholarly Work & Disseminated Research**

## ***Journal Articles (refereed)***

Ebeid, I. A. (2022). MedGraph: A semantic biomedical information retrieval framework using knowledge graph embedding for PubMed. ***Frontiers in Big Data***, *5*. [Link.](https://doi.org/10.3389/fdata.2022.965619)

Ebeid, I. A., Talburt, J. R., Hagan, N. K. A., & Siddique, M. A. S. (2022). ModER: Graph-based Unsupervised Entity Resolution using Composite Modularity Optimization & Locality Sensitive Hashing. ***International Journal of Advanced Computer Science & Applications***, *13*(9). [Link.](https://doi.org/10.14569/ijacsa.2022.0130901)

Yu, Q., Wang, Q., Zhang, Y. et al. Reply to issues about entity metrics & paper-entity citation network. ***Scientometrics*** 127, 2127–2129 (2022). [Link.](https://doi.org/10.1007/s11192-022-04311-y)

Ma, J., Ebeid, I. A., De Wit, A., Xu, M., Yang, Y., Bekkers, R., & Wiepking, P. (2021). Computational Social Science for Nonprofit Studies: Developing a Toolbox & Knowledge Base for the Field. ***Voluntas***, *34*(1), 52–63. [Link.](https://doi.org/10.1007/s11266-021-00414-x)

Yu, Q., Wang, Q., Yang, Z., Chen, C., Ryu, H., Park, N., Baek, J., Li, K., Wu, Y., Li, D., Xu, J., Liu, M., Yang, J. J., Zhang, C., Lu, C., Zhang, P., Li, X., Chen, B., Ebeid, I. A., . . . Bu, Y. (2021). Analyzing knowledge entities about COVID-19 using entity metrics. ***Scientometrics***, *126*(5), 4491–4509. [Link.](https://doi.org/10.1007/s11192-021-03933-y)

Xu, J., Kim, S., Song, M., Jeong, M., Kim, D., Kang, J., Rousseau, J. F., Li, X., Xu, W., Torvik, V. I., Bu, Y., Chen, C., Ebeid, I. A., Li, D., & Ding, Y. (2020). Building a PubMed knowledge graph. ***Scientific Data***, *7*(1). [Link.](https://doi.org/10.1038/s41597-020-0543-2)

## ***Conference Papers (peer-reviewed, mean acceptance rate: 34%)***

Ebeid, I. A., Talburt, J. R., & Siddique, M. A. S. (2022, February). Graph-based hierarchical record clustering for unsupervised entity resolution. In the proceedings of the *19th International Conference on Information Technology-New Generations* ***ITNG 2022*** (pp. 107-118). Cham: Springer International Publishing. [Link.](https://arxiv.org/abs/2112.06331)

Ebeid, I. A., Hassan, M., Wanyan, T., Roper, J., Seal, A., & Ding, Y. (2021). Biomedical Knowledge Graph Refinement & Completion Using Graph Representation Learning & Top-K Similarity Measure. In *the proceedings of* ***iConference 2021*** *Springer eBooks* (pp. 112–123). [Link.](https://doi.org/10.1007/978-3-030-71292-1_10)

Chen, C., Ebeid, I. A., Bu, Y., & Ding, Y. (2020). Coronavirus Knowledge Graph: A Case Study. *Workshop paper did not appear in the proceedings ACM**SIGKDD**International Conference on Knowledge Discovery in Databases* ***KDD 2020***. [Link.](https://arxiv.org/pdf/2007.10287.pdf)

Ebeid, I. A., Bhattacharya, N., Gwizdka, J., & Sarkar, A. (2019). Analyzing gaze transition behavior using Bayesian mixed effects Markov models. In *Proceedings of the 2019 ACM SIGCHI Symposium on Eye Tracking Research & Applications* ***ETRA 2019***. [Link.](https://doi.org/10.1145/3314111.3319839)

Ebeid, I. A., & Zhang, Y. (2019). A systematic review of the literature in nature on human-computer interaction: Preliminary results. In *the proceedings of* ***iConference 2019***. [Link.](https://doi.org/10.21900/iconf.2019.103307)

Ebeid, I. A., & Gwizdka, J. (2018). Real-time gaze transition entropy. In *Proceedings of the 2018 ACM SIGCHI Symposium on Eye Tracking Research & Applications* ***ETRA 2018***. [Link.](https://doi.org/10.1145/3204493.3208340)

Ebeid, I. A., Cruz-Neira, C., Jaiswal, M., & Zybaylov, B. (2016). Protein Chemical Cross-linking/Mass Spectrometry: From raw data to fully immersive visualizations. *Electronic Imaging Symposium* ***EI 2016***, 28(19), 1–1. [Link.](doi:10.2352/ISSN.2470-1173.2016.19.COIMG-178)

## ***Theses & Dissertations (committee reviewed)***

Ebeid, I. A. (2022). Graph-Based Unsupervised Entity Resolution for Identifying Entity Profiles in Ambiguous Data (Doctoral dissertation, University of Arkansas at Little Rock). [Link.](https://www.proquest.com/docview/2663058689/fulltextPDF/EDE57D987E404947PQ/1?accountid=40255)

Honorary mention in the following doctoral dissertation:

Jaiswal, M. S. (2015). Analysis of protein-protein interactions using chemical cross-linking mass spectrometry (CXMS): Novel computational approaches (Doctoral thesis, University of Arkansas at Little Rock). [Link.](https://www.proquest.com/docview/1696750056?pq-origsite=gscholar&fromopenview=true)

Ebeid, Islam A. (2013). Displaying Data Structures & Algorithms in a Graphical User Interface for Genesis Programming Language. Arkansas Tech University. [Link.](https://www.researchgate.net/publication/331972117_Displaying_Data_Structures_and_Algorithms_in_a_Graphical_User_Interface_A_Visual_Programming_and_Algorithm_Animation_Tool_for_Genesis_Programming_Language)

Ebeid, Islam Akef., et al. (2008). Vehicle Infrastructure Integration & Intersection Collision Avoidance System for Automated Traffic Systems. [Link.](https://www.researchgate.net/publication/331971949_Vehicle_Infrastructure_Integration_and_Intersection_Collision_Avoidance_System_for_Automated_Traffic_Systems%23fullTextFileContent)

## ***Books, Chapters, & Technical Reports (editor, expert, advisor, or instructor-reviewed creative work)***

Ebeid, Islam Akef. (2021). Biomedical Multi-source Data Integration using Knowledge Graphs & Entity Resolution: Understanding author expertise in Cancer Epigenetics research. [Link.](https://www.researchgate.net/publication/357159447_Biomedical_Multi-source_Data_Integration_using_Knowledge_Graphs_and_Entity_Resolution_Understanding_author_expertise_in_Cancer_Epigenetics_research)

Ebeid, Islam Akef. (2020). Knowledge Graph Mining: A Survey of Methods, Approaches, & Applications. [Link.](https://www.researchgate.net/publication/361197281_Knowledge_Graph_Mining_A_Survey_of_Methods_Approaches_and_Applications)

Ebeid, Islam Akef. (2020). Knowledge Profiling Using Biomedical Word Embedding & Knowledge Graph. [Link.](https://www.researchgate.net/publication/340978656_Knowledge_Profiling_Using_Biomedical_Word_Embedding_and_Knowledge_Graph)

Ebeid, Islam Akef. (2019). A Literature Review On The Automatic Generation of Chest X-Ray Medical Reports using Deep Learning. [Link.](https://www.researchgate.net/publication/340978330_A_Literature_Review_On_The_Automatic_Generation_of_Chest_X-Ray_Medical_Reports_using_Deep_Learning)

Ebeid, Islam Akef. (2019). Promoting the evaluation of the credibility & the quality of online health information through online web applications. [Link.](https://www.researchgate.net/publication/338216032_Promoting_the_evaluation_of_the_credibility_and_the_quality_of_online_health_information_through_online_web_applications)

Ebeid, Islam Akef. (2018). A Comparison Between the Gaze Transition Entropy & The Bayesian Semi-parametric Mixed Effects Markov Model in Comparing Scanpaths & Gaze Transitions. [Link.](https://www.researchgate.net/publication/338215759_A_Comparison_Between_Gaze_Transition_Entropy_and_The_Bayesian_Semi-parametric_Mixed_Effects_Markov_Model_in_Comparing_Scanpaths_and_Gaze_Transitions)

Ebeid, Islam Akef. (2018). Simple Eye Tracker Calibration for Tiled Display Walls. [Link.](https://www.researchgate.net/publication/331971794_Simple_Eye_Tracker_Calibration_for_Tiled_Display_Walls)

Ebeid, I. A., Bhattacharya, N., & Gwizdka, J. (2018). Evaluating The Efficacy of Real-time Gaze Transition Entropy. Research Gate, 1(1), 1-8. [Link.](https://www.researchgate.net/publication/331971910_Evaluating_The_Efficacy_of_Real-time_Gaze_Transition_Entropy)

Ebeid, Islam Akef. (2017). Analysis of Children's Reading Performance: An Eye Tracking Experiment. [Link.](https://www.researchgate.net/publication/331971812_Analysis_of_Children's_Reading_Performance_An_Eye_Tracking_Experiment?_sg%5B0%5D=9cQqG_fe0nKfC-Y3EKXGCYPZ-ubXbUbdkc_wAyxciodWM5HOKbqI83-xt8SHqi1VUmfHHmSoEF4ZNjTa24mnRBlD5_By1pcr3xZKguWf.sl1Q_exUQ-aiJefb4SUbUANkRTbL9kOwWVoduZnt8QQGwjLA_v9Y0SHJ_91DMUzdOAWWXrFGCMtI2je1Y3OiTw)

Ebeid, Islam Akef. (2017). Intel VME Simultaneous Localization & Mapping. [Link.](https://www.researchgate.net/publication/340978409_Intel_VME_Simultaneous_Localization_and_Mapping)

Ebeid, I., & Arango, J. (2016). Mallet vs. Gensim: Topic modeling evaluation report. University of Arkansas at Little Rock. [Link.](https://www.researchgate.net/publication/331972126_Mallet_vs_GenSim_Topic_Modeling_Evaluation_Report)

Ebeid, Islam Akef. (2015). Global Big Data Management & Governance in Health Care Information Systems. [Link.](https://www.researchgate.net/publication/331972122_Global_Big_Data_Management_and_Governance_in_Health_Care_Information_Systems)

Ebeid, Islam Akef. (2015). Real-time Object Scanning & Manipulation in the CAVE. [Link.](https://www.researchgate.net/publication/331971805_Real-time_Object_Scanning_and_Manipulation_in_the_CAVE)

Ebeid, Islam Akef. (2014). The National Visualization Laboratory. [Link.](https://www.researchgate.net/publication/331972130_The_National_Visualization_Laboratory)

## ***Op-eds, Blogs & Media (non-peer-reviewed creative work)***

Ebeid, I. A. (2022, November 18). Pixels. Medium. [Link.](https://medium.com/picsels)

Ebeid, I. A. (2023, June). Opinion: the link between information science theory and artificial intelligence explains the recent scare. AI monks. Medium. [Link.](https://medium.com/aimonks/pixel-9-the-link-between-information-science-and-artificial-intelligence-explains-the-recent-ab11cd49f3e3)

## ***Invited Talks, Seminars, and Conferences***

**University of Arkansas at Little Rock, Donaghy College of Engineering Science & Mathematics Graduate Seminar: Knowledge Representation & Data Mining using Knowledge Graphs. (2022)**

# **Service**

## ***Peer Reviewing***

Journal of Natural Language Engineering, Cambridge University Press (2022-2023)

International Conference on Bioinformatics & Biomedicine (BIBM) (2022)

29th ACM International Conference on Information & Knowledge Management (CIKM) (2020)

26th ACM SIGKDD Conference on Knowledge Discovery & Data Mining, International Workshop on Knowledge Graphs (KDD) (2020)

ACM SIGCHI Symposium on Eye Tracking Research & Applications (ETRA) (2018-2019)

Journal of Imaging Science & Technology (2016-2018)

## ***Editing***

Editorial Fellow, The Journal of Information & Culture, published by The University of Texas Press (2019)

Editor for the following publication (2017)

*Emami, Yasaman, & Coskun Bayrak. “EEG analysis of evoked potentials of the brain to develop a mathematical model for classifying tinnitus datasets.” 2017 IEEE International Symposium on Medical Measurements & Applications (MeMeA). IEEE, 2017.*

## ***Conference Participation***

Student Volunteer, ACM SIGCHI Symposium on Eye Tracking Research & Applications (ETRA) (2019)

Representative, The International Conference for High-Performance Computing, Networking, Storage & Analysis represented the University of Arkansas at Little Rock booth (2016)

Poster Participant, The MidSouth Computational Biology & Bioinformatics Society (2015-2016)

*Ebeid, I. A., Jaiswal, M., Cruz, C., & Zybaylov, B. (2016). VisInt-X: Visualizing Interactions in Cross-linked Proteins. ResearchGate.* [*Link.*](https://www.researchgate.net/publication/301766070_VisInt-X_Visualizing_Interactions_in_Cross-linked_Proteins)

*Ebeid, I. A., Jaiswal, M., Cruz, C., & Zybaylov, B. (2015). XLPM Map Viewer: A Protein-Protein Interaction Map Viewer. ResearchGate.* [*Link.*](https://www.researchgate.net/publication/331961223_XLPM_Map_Viewer_A_Protein-Protein_Interaction_Map_Viewer)

Poster Participant, University of Arkansas at Little Rock Research Expo Poster “Protein-protein interaction visualization.” (2015)

## ***Departmental and University Service***

Students Member, The Diversity & Inclusion Committee, School of Information, The University of Texas at Austin (2018-2019)

Faculty Advisor,The Computer Science Club, Southern Arkansas University (2023)

## ***Professional Memberships***

Student Member, ACM (2011)

Professional Member, IEEE (2008)

Professional Member, Egyptian Syndicate of Engineers (2008)

## ***Community Service***

Volunteer, Refugee Services of Texas, Austin, Texas (2018-2020)

Volunteer, Resala Foundation,Cairo, Egypt(2003-2008)

# **Hobbies**

Blogging and writing, reading in psychology and philosophy, karate and martial arts, hiking, swimming, video games, astronomy and star parties, jazz music, investment, and cryptocurrency.

# **Teaching**

## ***Texas Woman’s University***

Instructor, CSCI 5173, CSCI 3603, Foundations of Data Science, Fall (2023). [Syllabus.](https://iebeid.github.io/docs/CSCI-3603-5573-Syllabus.pdf)

Instructor, CSCI 5103 Fundamentals of Informatics, Fall (2023). [Syllabus.](https://iebeid.github.io/docs/CSCI-5103-Syllabus.pdf)

## ***Southern Arkansas University (mean teaching evaluation score: 4.46/5.0)***

Instructor, CSCI 2113 Computer Science II, Programming with Python, Spring (2023). [Syllabus.](https://iebeid.github.io/docs/CSCI-2111-2113-Syllabus-Ebeid.pdf)

Instructor, MSIS 5133 Database Management Systems, Spring, Summer (2023). [Syllabus.](https://iebeid.github.io/docs/MCIS-5133-Syllabus.pdf)

Instructor, MSIS 5033 The Unix Operating System, Summer (2023). [Syllabus.](https://iebeid.github.io/docs/MCIS-5013-Syllabus.pdf)

## ***The University of Texas at Austin (mean teaching evaluation score: 4.75/5.0)***

Instructor, Fundamentals of Computer Vision & Machine Learning, Summer (2018), Summer (2019). [Syllabus.](https://iebeid.github.io/docs/PAISE-2019-Syllabus.pdf)

Teaching Assistant, INF 385T Presenting Information, Spring (2019)

Teaching Assistant, INF 380E Perspectives on Information, Spring (2019), Fall (2019), Spring (2020)

Teaching Assistant, INF 397C Understanding Research, Spring (2019)

Teaching Assistant, INF 385T Virtual Environments, Fall (2019), Spring (2020)

Teaching Assistant, INF 385T Artificial Intelligence in Healthcare, Spring (2020)

Teaching Assistant, INF 385T Data Semantics, Spring (2020)

Teaching Assistant, INF 385T Human-AI Interaction, Fall (2020)

## ***University of Arkansas at Little Rock***

Teaching Assistant, IFSC 4345 Information Visualization, Spring (2016)

Teaching Assistant, IFSC 5399 Programming in Python, Fall (2016)

## ***Arkansas Tech University***

Teaching Assistant, COMS 1411 Introduction to Computer Programming, Spring (2012), Fall (2012)

Teaching Assistant, INFT 5703 Computer Networks I, Fall (2012), Spring (2013)

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