**Islam Akef Ebeid**

Assistant Professor of Computer Science at Southern Arkansas University

A person in a suit and tie

Description automatically generated with medium confidence

[Website](https://iebeid.github.io/) [Google Scholar](https://scholar.google.com/citations?user=Qwm3Py8AAAAJ&hl=en) [ResearchGate](https://www.researchgate.net/profile/Islam-Ebeid) [Github](https://github.com/iebeid) [Old Projects](https://iebeid.github.io/tinkering.html)

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# **Research Interests**

**Information Science:** mining, retrieval, and automated knowledge discovery in academic and bibliographic digital libraries, citation networks, and knowledge graphs.

**Network Science:** innovation in and applications of graph theory and graph representation learning in analyzing social, biological, and academic networks.

**Data Mining:** entity extraction, resolution, embedding, and recognition using traditional heuristic methods and deep learning language models.

**Database:** data quality and integration, especially entity resolution and record linkage in relational and graph databases.

**Health Informatics:** natural language processing, machine learning, and graph representation learning applications in mining biomedical datasets for data-driven drug discovery and disease progression prediction.

**Human-Computer Interaction:** user experience research using eye-tracking, computer vision, cognitive psychology, information visualization, and computer graphics in science.

# **Education**

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

MSc, Ph.D. in Computer & Information Science

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

Graduate work at the Ph.D. program in Information Science

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

MSc in Computer & Information Science

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, 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**

## ***Journal Articles (Peer reviewed)***

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 & Presentations (Peer reviewed)***

Ebeid, I. A., Talburt, J. R., & Siddique, M. A. S. (2022, February). Graph-based hierarchical record clustering for unsupervised entity resolution. In *ITNG 2022 19th International Conference on Information Technology-New Generations* (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 proceedings ACM 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 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 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, 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 dissertation, 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, Op-eds, Blogs & Technical Reports (Non-peer reviewed creative work)***

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

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)

## ***Invited Talks, Seminars, & Media***

* **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)

## ***Committee Involvement***

* 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)

## ***Society 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)

# **Teaching**

## ***Southern Arkansas University***

* Instructor, CSCI 2113 Computer Science II, Programming with Python, Spring (2023)
* Instructor, MSIS 5133 Database Management Systems, Spring, Summer (2023)
* Instructor, MSIS 5033 The Unix Operating System, Summer (2023)

## ***The University of Texas at Austin***

* Instructor, Fundamentals of Computer Vision & Machine Learning, Summer (2018), Summer (2019)
* 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 Interaction with Artificial Intelligence, 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)