


Eslam Hussein

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 [citations?user=Gli2AZEAAAAJ](https://scholar.google.com/citations?user=Gli2AZEAAAAJ)

Education

Virginia Tech	PhD student - Computer Science - 2018 - Present	3.82 GPA
Cairo University	Master of Science in Computer Science - 2016 Bachelor of Science in Computer Science – 2007	3.68 GPA

Publications

1. Achyut Ganti*, **Eslam Hussein***, Steve Wilson, Eva Zhao, Zexin Ma. Narrative Style and the Spread of Health Misinformation on Twitter. (* **equal contribution**) accepted at EMNLP'23 [[paper](#)]
2. **Eslam Hussein**, Hoda Eldardiry. Investigating Misinformation in Online Marketplaces: An Audit Study on Amazon. ([arXiv](#))
3. **Eslam Hussein***, Prerna Juneja*, Tanushree Mitra. Measuring Misinformation in Video Search Platforms: An Audit Study on YouTube. CSCW 2020 (* **equal contribution**) [[paper](#)]
4. **Eslam Hussein**, Ahmed Ibrahim Hafez, Aboul Ella Hassanien, Aly A Fahmy. Nature-inspired algorithms for solving the community detection problem. Logic Journal of the IGPL: Oxford Journals, 2017 [[paper](#)]
5. **Eslam Hussein**, Abdurrahman Ghanem, Vinicius Vitor dos Santos Dias, Carlos HC Teixeira, Ghadeer AbuOda, Marco Serafini, Georgos Siganos, Gianmarco De Francisci Morales, Ashraf Abounnaga and Mohammed Zaki. Graph Data Mining with Arabesque. SIGMOD 2017 (**Best Honorable Mention**) [[Demo paper](#)]
6. Fatma H. Ismail, **Eslam Hussein**, Aboul Ella Hassanien, Tai-Hoon Kim. Blog Clustering with Committee Approach. Fourth International Conference on Information Science and Industrial Applications (ISI) 2015
7. **Eslam Hussein**, Ahmed Ibrahim Hafez, Aboul Ella Hassanien, Aly A Fahmy. A Discrete Bat Algorithm for the Community Detection Problem. International Conference on Hybrid Artificial Intelligence Systems (HAIS2015) [[paper](#)]
8. **Eslam Hussein**, Ahmed Ibrahim Hafez, Aboul Ella Hassanien, Aly A Fahmy. Community Detection Algorithm Based on Artificial Fish Swarm Optimization. IEEE Conf. on Intelligent Systems 2014 [[paper](#)]

Projects

Video Entailment: this project aims to detect out-of-context videos used in disinformation campaigns, using multimodal machine learning and graph neural networks. Some tasks involved:

1. Information Extraction from Text and Video: extract events, and predict relationships (ERE)
2. Using LLM and graphs to understand the semantics of the extracted information
3. Training Graph Neural Networks to differentiate between entailed and out-of-context videos

Amazon Audit: this project aims to audit Amazon's search and recommendation systems for recommending misinformed vaccine items to the end-user. I am responsible for the following:

1. Experimental design of the project
 2. Data collection and processing
 3. Developing artificial bots that mimic the user interactions on Amazon (e.g., browsing and shopping)
 4. Develop models that classify Amazon items into promoting, opposing, or neutral to Vaccine misinformation.
- Technologies: Python, Selenium, Pandas, Matplotlib, Scikit-learn, Tensorflow, Keras, PyTorch, and Google Cloud Platform

YouTube Audit: this project aims to audit YouTube's search and recommendation systems for recommending misinformative videos (fake news, conspiracies, rumors ... etc.) to the end user. I am responsible for:

1. Experimental design of the project
 2. Data collection and processing
 3. Developing artificial bots that mimic user interactions with YouTube (searching, watching videos)
- Technologies: Python, Selenium, Node.js, Pandas, Matplotlib, Scikit-learn, and Google Cloud Platform

Arabesque is a distributed graph mining system; I had:

1. optimized the memory utilization
2. built applications on top of Arabesque
3. built and configured Hadoop clusters

Technologies: Hadoop, Apache Spark, Scala, Java, Python

QFrag is a distributed graph search system.

I was responsible for porting QFrag to work on top of Apache Spark instead of Giraph/Hadoop.

Using: Hadoop, Apache Spark, Scala, Java

Skills

Languages: Scala, Java, Python, C/C++, C#, VB.Net, Prolog, SQL/TSQL

Frameworks/Systems: Spark, Hadoop, PyTorch, Scikit-Learn, NLTK, Microsoft SQL Server, MySQL, Linux, ASP.NET, LINQ, WCF, XML, Javascript, JQuery, Git, SVN, RDF, Docker, Singularity, Google Cloud Platform, Selenium

Natural Languages: English, Arabic

Relevant Coursework: Data Analytics, Advanced Machine Learning, Graph Machine Learning, Social Computing, Statistics in Research, Information Retrieval, Learning based computer vision



Work

Advanced Research Computing (ARC)

Aug 2019 – present

Graduate Research Assistant, working as a help-desk responsible for:

- assisting users (5400+ users) in running their computational job on ARC clusters
- helping users troubleshoot problems and errors while they run their jobs
- installing software on ARC's clusters (cluster-wide) that users will use in their computational jobs
- developing, maintaining, and deploying containerized applications on ARC clusters (Docker, Singularity)

Social Computing Lab, Virginia Tech

Aug 2018 – Aug 2019

Research Assistant, responsible for designing and executing an algorithmic audit study about misinformation on YouTube

Qatar Computing Research Institute, Doha

Apr 2016 - Jun 2018

Research Associate had several responsibilities developing/maintaining/testing Arabesque and QFrag.

Cairo University

Sep 2007 - Mar 2016

Assistant Lecturer, Taught several Computer Science courses (Data Structures, Algorithms, NLP, AI, Software Engineering I and II, Artificial Intelligence)

Azhasys, Cairo

Aug 2011 - May 2012

Software Engineer, developed a couple of projects

1. *PrevWage*: an employee payroll management module, Technologies: VB.Net, SQL Server 2008, JQuery
2. *NOSR*: an event management module

Technologies: ASP.NET, SQL Server 2008, JQuery

Infinite Software Solutions Inc (ISSI)

Nov 2010 - July 2011

Software Engineer, developed a communication module that sends Emails, Faxes, and SMSs to a list of recipients.

Technologies: ASP.NET, WCF, LINQ, SQL Server 2008, JQuery, Subsonic, NUnit.

Data Mining & Computer Modeling Center of Excellence, Cairo

Apr 2008 - Sep 2010

Software Engineer, responsible for designing and developing a couple of projects

1. *Revenue Management System* (Plaza Hotel - Alexandria): A desktop application that uses machine learning to predict the revenue for the Plaza Hotel

Technologies: C#, SQL Server 2005, Crystal reports

2. *A Web portal* (Egyptian Ministry of Tourism): A portal that uses machine learning to forecast the number of tourists arriving in Egypt based on historical tourist arrival statistics in Egypt

Technologies: ASP.NET, SQL Server 2005, OLAP



Students Mentorship

Josh Mathew: B.Sc. Computer Science, Virginia Tech 2018-2022

Tran Chau: B.Sc. Computer Science, Virginia Tech 2019 - 2023

Andrew Zhang: B.Sc. Computer Science, Virginia Tech 2024



Service

Reviewer: ICWSM [2021, 2022], CSCW (2021, 2022, 2023), SNAM 2021, CHI 2022

Program Committee: ICWSM (2021, 2022)