

Lale Madahali

Statistics Intern – Ph.D. Student in Computer Science – U.S. Permanent Resident

✉ lalemadahali@gmail.com – 📞 531-222-7265 – 🔗 LinkedIn

Professional Summary

- Experienced in the field of social networks analysis, link prediction, social bot detection, natural language processing (NLP), binary classification, and imbalance data classification
- Proficient in object-oriented programming in Java
- Accomplished projects in text cleaning and topic modeling (LDA)
- Skilled with machine learning models: Naïve Bayes, support vector machine (SVM), Random Forest, Decision Tree, and Logistic Regression
- Familiar with deep learning models: multi-layer perceptron, CNN, RNN

Technical Skills

Programming	Java, HTML, SQL server, CSS, SAS
Data Analysis	R, Python, PyTorch
Python Packages	Tweepy, NumPy, pandas, scikit-learn, genism, NLTK, Spacy, SciPy, matplotlib, preprocessor
R Packages	dplyr, Tidytext, stringr, TwitterR, wordcloud, tm, ggplot2
Data Mining tools	Weka, IBM SPSS
Version Control	Git
Cloud Computing	Amazon Web Service (AWS)
Miscellaneous	PowerBI, Gephi, nodeXL, UCINet, Wireshark, 3D Max, Edius, Linux Backtrack

Work Experience

Graduate Student Researcher

Aug 2020-Present

Iowa State University

Ames, IA

- Designed and implemented a method to detect and characterize genuine and malicious social bots using machine learning techniques (KNN, SVM, random forest, decision tree, and naive Bayes classification) and using Python packages for data collection and analysis
- Analyzed Twitter Election Integrity data on state-back information operations for the U.S. 2016 presidential election using R packages for data collection, data cleaning, and analysis
- Performed exploratory factor analysis of graphical features using IBM SPSS for link prediction in social networks and using Weka as the data mining tool
- Studied supervised feature-based link prediction in social networks and ran binary classification models, using Bagging and Boosting to improve the performance
- Worked on imbalanced data classification in the co-authorship networks using techniques like SMOTE, undersampling, and oversampling to achieve high classification performance
- Applied Benford's law to social bots and information operations activities

Statistics Intern

Jan 2024-Mar 2024

Iowa State University Foundation

Ames, IA

- Utilized appropriate statistical methodology to identify and analyze factors important for measuring donor and prospective donor engagement
- Analyzed data to identify high-priority subpopulations, informing targeted outreach efforts
- Evaluated existing targets and developed a repeatable model to update fundraising projections
- Utilized the projections to infer the inputs needed to meet those targets, such as staffing levels and budget

Education

Computer Science, Ph.D. <i>Iowa State University</i>	<i>Aug 2020-Present</i> <i>Ames, IA</i>
Computer Science, M.Sc. <i>Iowa State University</i>	<i>Aug 2020-Dec 2023</i> <i>Ames, IA</i>
Information Technology Engineering, M.Sc. (Minor in e-commerce) <i>Qom University</i>	<i>Aug 2012-Feb 2015</i> <i>Qom, Iran</i>
Information Technology Engineering, B.Sc. <i>Shiraz University of Technology</i>	<i>Aug 2007-May 2011</i> <i>Shiraz, Iran</i>

Teaching/Mentoring Experience

Graduate Teaching Assistant <i>Iowa State University</i>	<i>Aug 2020-Dec 2023</i> <i>Ames, IA</i>
<ul style="list-style-type: none">Managed Java programming labs, ran office hours, and graded exams and assignmentsSupervised 60 undergraduate students	
Research Mentor - Research Experience for Undergraduates program <i>Iowa State University</i>	<i>May 2022-Aug 2022</i> <i>Ames, IA</i>
<ul style="list-style-type: none">Mentored 9 NSF-funded undergraduate research interns from 5 different states in the U.S. with their individual and group research projectsCoached 9 research interns to motivate them to go for STEM degrees in graduate school	
Instructor of Record/Graduate Teaching Assistant <i>University of Nebraska Omaha</i>	<i>Jan 2017-May 2020</i> <i>Omaha, NE</i>
<ul style="list-style-type: none">IT Infrastructure instructor for two semesters, created syllabi and developed the course material, quizzes, exams, labs, and assignments, 22 undergraduate students per semesterTaught Java labs, ran review sessions, and graded exams, assignments, and quizzes for four semesters, 50 undergraduate and graduate students per semester	

Leadership Skills and Services

• Computer Science Graduate Student Organization	2023-Present
• Reviewer for conference papers and journal articles	2017-Present
• Chair - Women in Data Science, Iowa State University	2022
• Board Member - International Student Council, Iowa State University	2022
• Board Member - International Program for Global Diplomat, University of Nebraska	2018-2019
• Vice President - Bioinformatics and Information Technology graduate students organization	2017-2018

Selected Conference Papers

- **L. Madahali**, and J. Tian, Bots: Genuine or Malicious, *IEEE 14th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference*, 2023.
- **L. Madahali**, and J. Tian, I'm not a human: A comparison of bot and human self-presentation, *IEEE 14th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference*, 2023.
- **L. Madahali**, and M. Hall, Application of the Benford's law to Social bots and Information Operations activities, *International Conference on Cyber Situational Awareness, Data Analytics and Assessment (CyberSA)*, 2020.
- **L. Madahali**, L. Najjar, and M. Hall, Exploratory factor analysis of graphical features for link prediction in social networks, *CompleNet*, 2019.