# Asmah Muallem, Ph.D.

Last updated: January 13, 2025

---

## Current Position(s)
Assistant Professor of Computer Science and Data Science
School of Applied Computational Sciences
Meharry Medical College
Nashville, TN

## Education
Ph.D. in Computer Information Systems Engineering, Tennessee State University, Nashville, TN   2018
M.S. in Computer Information Systems Engineering, Tennessee State University, Nashville, TN   2012
B.S. in Computer Science, Tennessee State University, Nashville, TN   2004

### Academic Appointments
Assistant Professor of Computer Science and Data Science   2025 – Present
School of Applied Computational Sciences
Meharry Medical College
Nashville, TN

Teaching Assistant   2015-2018
Tennessee State University,
Nashville, TN

Research Assistant   2015-2018
Tennessee State University
Nashville, TN

Research Assistant   2011-2012
Tennessee State University
Nashville, TN

## Professional Positions and Experience
Software Engineer III (Machine Learning Engineer)   2018-2024
Asurion
Nashville, TN

Software Engineer II (Mobile Developer)   2013-2015
Asurion
Nashville, TN

QA Automation Analyst   2012-2013
Asurion
Nashville, TN

Computer Systems Analyst   2008-2010
Vanderbilt University Medical Center
Nashville, TN

Programmer   2006-2008
United Parcel Services (UPS)
Timonium, MD

Southeast Region Center Technician                                       2004-2008
United Parcel Services (UPS)
Nashville, TN

## Certification and Licensure
AWS Cloud Practioner Certification                                            2021
CompTIA                                                                       2005
Java 1.2 Certification                                                        2004

## Professional and Educational Development
Mosaic ERG KPI Analyst, Asurion, Nashville, TN                               2023
Hackathon Ceremonies, Asurion, Nashville, TN      2013, 2018, 2019, 2021, 2023
AWS ML Workshops, Nashville, TN                                       2019, 2022
AWS Certification Training, Nashville, TN                                    2021
Azure AI Workshop, Nashville, TN                                             2019
NTC Analytics Summit, Nashville, TN                                          2018
INCOSE Bootcamp, Tennessee State University, Nashville, TN                   2018
Microsoft Visual Studio Workshop, Nashville, TN                             2014
Total Immersion Targeted Infusion Training, LA, California                   2011
New Horizons SQL Workshop, Nashville, TN                                     2008
Windows Systems Programming Workshop, Timonium, MD                           2007
C# and ASP.NET Bootcamp, Parsippany, New Jersey                             2006
Java Certification Bootcamp, Tennessee State University, Nashville, TN       2004

## Professional Memberships and Activities
Tennessee State University (TSU)                                 2012 – Present
Member of the Golden Key International Honor Society

International Council on Systems Engineering (INCOSE)                    2018-2022
Member of the Huntsville Regional Chapter

## Educational Activities
- Graduate Teaching Assistant: DHS Scientific Leadership (Data Analytics Program),       2015-2018
  Instructed qualified undergraduate students on various Data Science topics: Feature Extraction, Machine Learning, Data Analytics, Jupyter, Anaconda, Scikit, Pandas. Prepared lectures, class activities, and final project. Created study guides, created and graded course assessments, quizzes.
- Graduate Teaching Assistant:  Data Mining Undergraduate Research       2015-2018
  (ROTC Cyber Program), Mentored qualified undergraduate students and ROTC cadets on research initiative of Twitter Analysis using Machine Learning & Spark for Cybersecurity. Prepared programming sessions to work on machine learning topics and quizzes. Students results presented and shared in video for requirements of program.
- Graduate Mentor: Mentored undergraduate student on senior capstone project       2016-2017
- Work-study Tutor: Tutored undergrade students in the Computer Science Department       2002-2003
  on programming assignments in computer science.

## Research Experience
**Tennessee State University, Nashville, TN, USA**                  August 2015-April 2018
**Doctoral Research and Graduate Research Assistant** Advisor: Dr. Sachin Shetty
TSU Interdisciplinary Graduate Engineering Research Institute
- Distributed Machine Learning for Streaming Cyber Data, funded by Boeing Data Analytics and Office of the Assistant Secretary of Defense for Research (OASD): Derived suitable machine learning methodology for producing highest accuracy in massive datasets.  Designed, developed and implemented a machine learning IDS framework using machine learning algorithms and derived techniques to detect anomalies within streaming cyber datasets.

- Contributed to various machine learning projects aimed at developing techniques for cybersecurity and Big Data.

**Tennessee State University, Nashville, TN, USA**                              January 2011-May 2012
**Graduate Research Assistant** Advisor: Dr. Sachin Shetty
College of Engineering, TSU Interdisciplinary Graduate Engineering Research Institute
- IP Geolocation, Funded by National Science Foundation. Designed, developed, and implemented a visualization application utilizing IP Geolocation for spam analysis. The integration of MaxMind, WhoIS and the Google Maps API to provide a visualization of the geographical location of spammers and related security information.
- Virtual Reality, Funded by National Science Foundation. Designed, developed, and implemented a visualization tool for the analysis of aircraft structural defects. An augmented reality application providing a visual interface of the scores associated with level of defects in an Aircraft structure.

## Honors and Awards
Graduate School Conference Travel Award                              2012
INCOSE Scholarship                              2018
Research Assistantship Awards                              2011-2012, 2015-2018
Asurion Community MVP of the year Award                              2024

## Publications
- Asmah Muallem et al. TDDHT: Threat Detection Using Distributed Ensembles of Hoeffding Trees on Streaming Cyber Datasets. In *IEEE Military Communications Conference (MILCOM)*, 1-6, 2018
- Asmah Muallem et al. Hoeffding Tree Algorithms for Anomaly Detection in Streaming Cyber Datasets. In *Journal of Information Security,* Vol. 8 No. 4, pp. 339-361, 2017
- Asmah Muallem et al. Visualizing Geolocation of Spam Email. In *IEEE Computing, Communications and Applications Conference (ComComAp)*, 2012
- Asmah Muallem et al. Virtual Reality Based Visualization for Structural Health Monitoring Analysis. In *Computer Applications in Industry and Engineering,* 2011

## Oral Presentations
Peer-reviewed Presentations
- Threat Detection Using Distributed Ensembles of Hoeffding Trees on Streaming Cyber Datasets. 37th IEEE Military Communications Conference (MILCOM), LA, California, October 29-31, 2018.
- Asmah Muallem et al. Visualizing Geolocation of Spam Email. IEEE Conference on Computing, Communications, and Applications (ComComAp), Hong Kong, China, January 11-13, 2012.
- Virtual Reality Based Visualization for Structural Health Monitoring Analysis, 24th International Conference on Computers and Their Applications in Industry and Engineering (CAINE), Honolulu, Hawaii, November 16-18, 2011.
- Virtual Reality Based Visualization for Structural Health Monitoring Analysis, Emerging Researchers National (ERN) Conference in STEM, Atlanta, GA, February 23-25, 2012.

## Professional Community Activities
- VEX Robotics Judge, Nashville, TN, USA: Judge for the MLK Robotics Competition.            2019
- Middle TN STEM EXPO Evaluator, TSU, Nashville, TN, USA: Judge scores and projects.            2016
- KIPP Tutor, Cole Elementary, Nashville, TN, USA: Tutored students on mathematics subjects.  2012

## Computer Skills
**Programming Languages:** Node.js, Python, Java, C++, C, C#, ASP.Net, VB 6.0, VB.Net, SQL, HTML, CSS, JavaScript, Unix, GraphQL, Scala, MFC, MySQL, Oracle SQL, R, MATLAB
**Tools and Technologies:** AWS technologies, Azure AI, TensorFlow, Spark, Spark Streaming, Android Studio, GitHub, Unix, Kubernetes, Ajax, Neo4j, Jupyter Notebook, Airflow, Postman, XML, WEKA, Wireshark
**Libraries:** Scikit, Pandas, NumPy, Plotly, SciPy, NLTK, React, GitHub REST API, NPM