Ahmed Saaudi

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Certificate:

John C.Maxwell Certification Program	*2019*
Presentation Skills & Effective Communication, C&M Leadership Essential	*2018*
Cybersecurity Studies Certificate, University of South Carolina	*2017*

Education

University of South Carolina, College of Engineering& Computing

Doctor of Philosophy, Computer Science & Engineering	*2015-2019*
Master of Science in Engineering Management	*2019*
Master of Science in Computer Science & Engineering	*2018*
Language Program: English Program for international students	*2014*

Information Engineering/University of Al-Nahrain.

Master's degree in Information Engineering	*2008 – 2011*

Al-khawarizmy College & Engineering/University of Baghdad.

Bachelor's degree in Information and Communication Engineering	*2003 – 2007*

Experience

- **Director of ECE Department | University of AL-Muthanna | College of Engineering**
  - Monitoring and evaluating staff performance, Setting strategic long and short-term goals
- **Internship || | Richland County** *April 2019 – 2020*
  - Served as IT consultant to develop IT Needs Assessment Plan for Richland-County IT environment
- **Research Assistant | University of South Carolina.** *2015 – 2019*
  - Designing and implementing cybersecurity systems with machine learning techniques
  - Studying the nature of user behaviors, trends of insiders
  - Analyzing different kinds of computer-based log data
  - Utilizing two programming environments to develop the work: (Python and R)
- **Teaching Assistant | University of South Carolina.** *August 2019 – December 2019*
  - Served as a Teaching Assistant for "Computer Science & Engineering Department"
  - (Introduction to computer concept – Lab 101 and Lab 102), a 3-credit course designed to teach students programming skills using Python, Java script, HTML, and CSS
- **Teaching Assistant | University of South Carolina.** *August 2017 – December 2017*
  - Served as a Teaching Assistant for "Computer Science & Engineering Department"
  - (Data Structure & Algorithms 350), a 3-credit course designed to teach students how to analyze their codes, using different data structures.
  - (Information Security Principles 522), a 3-credit course that provides an introduction to different security foundations such as authentication, access control, and database security
- **Head of the database department | University of al-Muthana** *January 2012 – October 2013*
- **Lecturer | University of al-Muthana, College of Science**
  Computer fundamentals, Internet security, Graduate project director *January 2011 – October 2013*
- **Lecturer | University of al-Emam al-Sadik** *January 2011 – October 2013*
  Programming with c & c++, network fundamentals, AI fundamental
- **Teaching Assistant | University of Al-Nahrain, College of Information Engineering** 2010
  Basics of networking, computer fundamentals.
- **Private Organization | Provincial Reconstruction Teams (PRTs), USA, to help Iraqi people** 2010
  IT specialist, workshop coordinator
- **Private Organization | ACTED, a French organization to help Iraqi people** *2008 – 2009*
  IT specialist, community assistance

Skills & Abilities

- **Programming Language**: R, Python, Java, JavaScript, C++, etc.
- **Tools**: R studio, Spyder, Eclips, text editors: sublime, Visual Studio Code, etc.
- **Database**: SQL server, Mysql, Oracle, Mongodb
- **Office**: Microsoft office (word, power points, Excel, Access)
- **Operating systems**: Windows, Linux, Mac
- **Web**: Java Script, HTML, CSS, Bootstrap, Flex, etc.
- **Data Visualization**: Tableau, R, Python, etc.
- **Deep Learning Algorithms:** ANN, CNN, LSTM, variation of these algorithms.
- **Natural Language Processing with Deep Learning**: Python, and R
- **Machine Learning and and modeling Algorithms**: k-NN, Naive Bayes, SVM, Decision Forests, etc.
- **Artificial Intelligence Toolkits:** Python, R, SciKit-learn, Keras, TensorFlow, etc.

Projects

Cybersecurity: Insider threat detection system (2019), University of South Carolina:
Malicious insiders increasingly affect organizations by leaking classified data to unauthorized entities. In our research, we aim to detect insiders' misuse in computer systems. The broad purpose of the work is to develop an accurate computer-based anomaly detection system to identify insiders. The specific goals are:
- Reducing the false positive and false negative rates of detection.
- Detecting malicious hidden behaviors.

The work can be summarized as follows:
- Computer-based event logs are preprocessed to generate session-based encoded data samples. These samples represent user behaviors with each session.
- Normal computer-based events are used to develop an unsupervised detection system that models users` behaviors. The developed models predict a score for each data sample. The predicted scores indicate the possibility of the current behavior to be an insider behavior or not.
- The models are trained with normal computer-based events, samples. These samples are considered as normal baselines. Then, the models are used to evaluate new user behaviors by predicting a score for each data sample. The unusual behaviors are identified by comparing the predicted scores to the normal baseline.
- Several machine learning models are developed using: HMM, HMM_SGD.
- Python is used to develop the work.

Cybersecurity: Insider threat detection system using Natural Language Processing (NLP) with Deep Learning (DL) (2018), University of South Carolina:
The broad purpose of the work is to develop deep learning-based anomaly detection systems to identify malicious behaviors. We propose to use Natural Language Processing (NLP) with deep learning techniques to develop our work. The specific goals of developing our detection system are:
- Autonomously extract the features that represent user behaviors.
- Understand the semantic meaning of user behaviors.

The work can be summarized as follows:
- Preprocessing the computer-based log data that include access event logs, http, file, thumb drive, and email event logs to generate session-based textual data samples. These samples represent the actual user behaviors with each session.
- Three deep network systems are developed: CNN, LSTM, and CNN_LSTM
- A profile dataset is created for each user.
- Subject-based 10 folds cross validation procedure is used to train and test the detection models.
- R data analysis language is used to develop the preprocessing system.
- Python, with Keras, is used to develop the deep model.

Drones Authentication System (2018), University of South Carolina:
- Purpose of the work: Building an authentication system to identify drones. The hypothesis is to identify drones based on internal device noise

The work can be summarized as follows:
- Reading and processing the log data from a specific drone
- Developing a deep learning-based model as a noise-baseline using drone log data
- Reading and processing the log data from another drone
- Evaluating the proposed system on log data of two different drones. The evaluation is based on testing the model's ability to identify the right drone.
- Python, with Keras, is used to develop the work.

Object Detection System (2017):
- Developing a deep learning-based object detection system. The broad purpose of the work is to explore the detection ability of deep neural network on image-based objects.
- Animal dataset is used to train and evaluate the model.
- Deep and wide network structures are used to develop the object detection systems
- The hyperparameter change on the model performance is analyzed
- Python, with Keras, is used to develop the work.

OOP Registration System (2017):
- Building an object oriented-based software system to manage student registration information (Software Engineering course project).
- The work includes all software engineering essentials from getting the requirements to publishing the work as an object.
- Java language, with Eclips, is used to develop the work.

Participating in many other projects that include (2015-2016): Robotics, Compilation, and File transferring projects

Building Clustered Distributed Database for Iraqi National Information System (2011)
- The main purpose of the work is to develop an information system that combines information from three databases. Oracle developer 10g was used to implement the proposed system.