AHMED BENSAOUD

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SUMMARY

- Seasoned software engineer with 15+ years of experience in various development platforms and methodologies.
- Data Scientist with 5+ years experience in malware detection and classification using data mining, clustering, transfer learning, multi-task learning, active learning, hybrid model and Natural Language Processing (NLP) techniques.
- Deep understanding of data analysis, modeling, and visualization.
- Self-motivated problem-solver with excellent inter-personal communication skills.
- Experience in computer vision algorithm design development and integrating machine learning algorithm into camera systems.
- Experience with deep learning structures CNN, RNN, autoencoder etc. and frameworks like TensorFlow/PyTorch.
- Good understanding of Image Quality (IQ) aspects, IQ evaluation methodologies and metrics.

EDUCATION

- **University of Colorado Colorado Springs, USA**
  PhD Computer Science (Candidate) 2018-present (expected completion by Dec 2022).
- **Colorado State University, USA**
  19 credits of graduate level courses in Computer Engineering (Topic in Robotics, Global Positioning Systems, Internet Engineering, Applications of Random, Optimization Method Control, and Overview of System Engineering) - 2018

TECHNICAL SKILLS

- Jave, Python, C#, Tibco, Hadoop, JavaScript, HTML5, .Net, C, C++, Swift, IIS, Weblogic, JBOSS, Tensorflow, and Keras, Kotlin.
- Linux and Windows administration and scripting.
- Experience in Java and building mobile native Android apps.
- Experience with SQL and a relational database, such as SQL Server, and MySQL, and Oracle.
- Identify and use tools and techniques to conduct static and dynamic analysis of malware

RESEARCH INTEREST

- Research developments, trends, and challenges of malware detection and classification.
- Research on Natural Language Processing (NLP) with sequential models such as LSTM and RNN in identifying network traffic anomalies, and malicious API Calls.
- Research on Generative adversarial network to improve deep learning approaches.
- Research on medical image classification based on deep learning.
- Research on improve the GPS position accuracy using machine vision and deep learning techniques

PROJECTS

- Generating Tennis Player by the Predicting Movement using 2D Pose Estimation.
- Novel Graph Neural Network for Modern Obfuscation Detection.
- Enhance Active Learning Approach for Unlabeled Large Scale Images.
- Optimizing Model Poisoning Attacks and Defenses for Federated Learning.
- Evaluate cryptographic algorithms for cloud computing.
- Using Natural Language Processing (NLP) techniques to Ransomware detection.
- Analysis Incident Response based on Ransomware and Intrusion.

AWARDS

- 2021 - Received Colorado Cybersecurity Scholarship.
- 2020 - Graduate School Tuition Matching Grant from University of Colorado Colorado Springs.
- 2020 - Graduate Research Fellowships.
- 2019 - Graduate Assistant Research.

WORK EXPERIENCE

- Reviewer for IEEE Access 2022.
- 2019 - 2022 Graduate Teaching Assistant (GTA) (Principles of Comp Science (JAVA), Data Structures & Algorithms, and Programming in C)
- Summer 2019 and 2021 - mentored undergraduates as part of the Research Experience for Undergraduates (REU) program from the National Science Foundation (NSF).
- Completed 20 credits hours in area of Named Data Networking (NDN), and the goal of this work is to design the next generation of Internet Architecture.
- Applied scheduling algorithms (Deficit Round Robin and Weighted Fair Queuein) to evaluate Quality of Services (QoS) in NDN and the results conducted by OPNET simulation.
- Designed peer-to-peer overlay networks by Socket Programming.
- Analyzed and evaluated Quality of Services (QoS) of Worldwide Interoperability for Microwave Access (WiMAX) Networks.
- Applied Case-Based Reasoning (CBR) algorithm to medical diagnosis and treatment.
- Designed algorithms to convert two dimensions images to three dimensions images using Matlab.

- Used neural network to solve linear and quadratic programming problems
- Designed and implemented Games using C++ and Java languages.
- Designed fuzzy logic approach for educational grading system using Java language.

CLUBS

- Cybersecurity Club at the University of Colorado Colorado Springs UCCS.
- Cyber Secrets: Forensics, Hacking, and Security Club.
- Python Machine Learning & Deep Learning Club.
- Cyber Security - Digital Forensics - Ethical Hacking ONLY Club.

PUBLICATIONS

- **Classifying Malware Images with Convolutional Neural Network Models**
  Published in International Journal of Network Security -Nov 2020.
  `http://arxiv.org/abs/2010.16108`
- **Deep Multi-Task Learning for Malware Image Classification**
  Published in Elsevier Journal of Information Security and Applications -Dec 2021.
  `https://authors.elsevier.com/a/1eHY47tT2CksQy`
- **Classifying malware families based on Opcode, mnemonic, and API Calls using N-gram**
  To be submitted to Cyber Security And Protection Of Digital Services in Spring 2022
- **Milestone of Malware Detection Using Deep Learning**
  To be submitted to Elsevier- Journal of Systems Architecture in Spring 2022
- **Using active learning to labeled 1 million unlabeled malware**
  To be submited to IEEE Internet of Things in Summer 2022

REFERENCES

- **Mahdi Omar**
  Director of Applications Development - CCCS-IT
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  303-883-6612
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