



DR. MOHSEN KAKAVAND

ENGLISH AND PERSIAN LANGUAGE

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Academic Qualifications

- 2012-2017 Doctor of Philosophy (Intelligence Computing | Cyber Security), University Putra Malaysia, CGPA 4.00
- 2009-2012 Master of Information Technology (Data Mining), Multimedia University Malaysia, CGPA 3.40
- 2004-2007 Bachelor of Governmental Management (Information Systems), Tehran (IAU), CGPA: 3.40

Academic Experience:

□ Lecturer on Cybersecurity | Big Data Analytics

- Dec 2017– Present

Address: Department of Computing and Information Systems, Faculty of Science and Technology, Sunway University in Malaysia.

I am currently working as a Lecturer on Cybersecurity | Big Data Analytics at the Department of Computing and Information Systems, Faculty of Science and Technology, Sunway University in Malaysia. My research interests are machine learning algorithms and big data analytics on cybersecurity. Moreover, I have been teaching different types of computer science and security subjects such as:

- Computer Security
- Data Mining
- Big Data Analytics
- Advanced Computer Networks
- Advanced Topic Computer Security
- Python programming

Key Responsibilities:

- Teaching computer science and security subjects
- Training and running the practical and interactive workshops
- Supervision of Master and PhD students
- Supervising undergraduate final year projects

Current Research Activities:

- AI-driven android anomaly detection
- Detecting Ransomware attacks via machine learning methods
- Security and privacy aspects of Blockchain systems
- NLP and Statistical Feature Process Models for Text Classifications

□ Teaching Assistant in Data Science | Big Data Analytics (UPM)

Address: Computer Science and IT Faculty, Jalan Upm, 43400 Serdang, Selangor, Malaysia

- February 2017 – August

- Teach undergraduate course in the Big Data Analytics and Data Science.
 - Develop course materials such as assignments and Quizzes and support for teaching.
 - Teach Python libraries, including Numpy, Scipy, Pandas, and Sci-kit learn.
 - Data Visualization: Python Matplotlib and Seaborn
 - Social Network Analysis
 - Teach "Big Data Technologies", including Apache Spark and Hadoop.
 - Machine Learning algorithms such as SVMs, Decision Trees
- **Research Assistant, University Putra Malaysia (UPM)**
Address: Computer Science and IT Faculty, Jalan Upm, 43400 Serdang, Selangor, Malaysia
- 2012 - 2017
 - Text Mining and Machine learning algorithms for packet payload anomaly intrusion systems (IDS).
 - Identify essential methods, solutions, limitations and challenges in IDS.
 - Illustrative a novel framework, which is known as TMAD.
 - Propose an effective Dimensionality Reduction (DR) and Feature Selection Engine (FSE)
 - Propose an IDS called the Online Adaptive Deep-Packet Inspector (O-ADPI)
- **Teaching Assistant, University Putra Malaysia (UPM)**
Address: Computer Science and IT Faculty, Jalan Upm, 43400 Serdang, Selangor, Malaysia
- March 2014
 - Data Mining techniques – Graduate Level
 - WEKA data mining – Graduate Level
- **Teaching Assistant, Islamic Azad University (IAU)-Tehran**
Address: Islamic Azad University Central Tehran Branch - Faculty of Management, Tehran, Iran
- April 2007 – 2009
 - Human Resource Systems (HRS) – Graduate Level
 - More than 20 Seminars and workshops in HRS domain – Enterprise Level

Supervisions:

- **PhD (main supervisor)**
 - Alla Rajani, (2017), *Security and Privacy on the Blockchain Using Deep Learning Methods*
- **MSc (main supervisor)**
 - Teh Chye Phing, (2018), *Investigation of the Biological Systems with Machine Learning*
- **Undergraduate**
 - Lee Yong Tuck, (2018), *Android Malware Detection Using Machine Learning*
 - Loo Yoong Jian, (2018), *Machine Learning based Anomaly Detection for HTTP Web Service Attacks*

Research Interests:

- **Intelligence Computing**
 - Machine Learning and Data Mining Techniques
 - Text Mining, Sentiment Analysis and Natural Language Processing (NLP)
 - Statistical Models for Dimensionality Reduction and Feature Selection
 - Big Data Analytics and Data Science
 - Process Mining and Data Science
- **Intrusion Detection Systems**
 - Packet Payload Analysis

- Machine Learning-based Intrusion Detection Methods
- Android Malware Analysis via Machine Learning Classification

□ **Multidisciplinary Researches**

- Linguistic and Statistical and Document classification for news
- Sentiment-based learning in political and policy news for decision-making

Teaching Interests:

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|--|------------------------------------|--------------------------------|
| • Data Mining | • Computer Security | • Data Structures & Algorithms |
| • Data Science Big Data Analytics | • Intrusion Detection System (IDS) | • Web Programming |
| • Programming Language (Python and Java) | • Artificial Intelligence | • Advanced Network Security |

Technical Skills:

□ **Data Science Skills:**

- Machine Learning: Classification, Regression, Clustering, Association Rules, and Text Mining. I have an excellent understanding of MDM, SVM, LDA and PCA etc.
- Python programming for Pandas, scikit-learn, NumPy, SciPy, matplotlib and NLTK.
- WEKA for data mining techniques
- Big data technologies: Apache Spark and Hadoop
- R Studio: Modern Applied Statistics, validation, prediction and statistical packages.
- Cryptography Hacks with Python
- Python for HTTP Packet Payload Analysis

□ **Software engineering tools:**

- Database Development:
 - Microsoft SQL server R2 2008 (**Microsoft Certified**)
 - MySQL
- Java Programming SE 6 (**Oracle Certified**)
- Web developments:
 - Technologies: PHP, HTML, CSS
 - CMS: Drupal, WordPress

Certification Qualifications:

- 2017 Certification of Completion – **Big Data with Apache Spark and Python** in Udemy
- 2017 **Data Science in Python** by University of Michigan (Coursera)
- 2017 **Process Mining: Data science in Action** by Eindhoven University of Technology (Coursera)
- 2015 Certification of Completion – **Python for Data Analysis and Visualization** in Udemy
- 2014 Certificate of Global Journal of Science Research Inc. (USA)
- 2011 Certificate of **Oracle** Java Programming SE 6
- 2011 Certificate of **Microsoft** Technology Associate: Database Administration Fundamentals

- 2011 Certification of Completion _ MTA Database Administration Fundamentals in MMU
- 2009 Certificate of Intensive English Language Programme (IELP) in MMU

Research Publications:

- 1) **Mohsen Kakavand**, Norwati Mustapha, Aida Mustapha, Mohd Taufik Abdullah, *A Text Mining-Based Anomaly Detection Model in Network Security*" Global Journal of Computer Science and Technology, vol. 14, 2014
- 2) **Mohsen Kakavand**, Norwati Mustapha, Aida Mustapha, Mohd Taufik Abdullah and Hamed Riahi, *A Survey of Anomaly Detection Using Data Mining Methods for Hypertext Transfer Protocol Web Services*," Journal of Computer Science, Volume 11, Issue 1, Pages 89-97, 2015
- 3) **Mohsen Kakavand**, Norwati Mustapha, Aida Mustapha, Mohd Taufik Abdullah and Hamed Riahi, *Issues and Challenges in Anomaly Intrusion Detection for HTTP Web Services*," Journal of Computer Science, Volume 11, Issue 11, Pages 1041-1053, 2015
- 4) **Mohsen Kakavand**, Norwati Mustapha, Aida Mustapha, Mohd Taufik Abdullah, *Towards a Defense Mechanism against REST-based Web Service Attacks* " Advanced Science Letters, (Adv. Sci. Lett). 22, 2827–2831 (2016)
- 5) **Mohsen Kakavand**, Norwati Mustapha, Aida Mustapha, Mohd Taufik Abdullah, *Effective Dimensionality Reduction of Payload-Based Anomaly Detection in TMAD Model for HTTP Payload*" KSII Transactions on Internet and Information Systems, 10, 8, (2016), 3884-3910. DOI: 10.3837/tiis.2016.08.025
- 6) **Mohsen Kakavand**, Norwati Mustapha, Aida Mustapha, Mohd Taufik Abdullah and Sepideh Foroozan, *“Online Adaptive Deep-Packet Inspector for Sensitivity Analysis of Web Service Message Attacks ”* Journal of Computers & Electrical Engineering, Submitted 2018.
- 7) **Mohsen Kakavand**, Vahab Iranmanesh, Mohammad Dabbagh, *“PE File Anomaly Detection Using Machine Learning Algorithms ”*, Journal of Wireless and Microwave Technology (JWMT), Accepted 2018.
- 8) Sepideh Foroozan Yazdani, Zhiyuan Tan, **Mohsen Kakavand**, Aida Mustapha, *“NgramPOS: A Bigram-based Linguistic and Statistical Feature Process Model for Unstructured Text Classification ”*, Mobile Networks and Applications, Accepted, 2018.

Honors, Awards and Grants:

- Fundamental Research Grant Scheme (FRGS) Under Ministry of Higher Education, Malaysia (2013-2017)
 - **Project Name:** “Text Mining-based Payload Anomaly Intrusion Detection”
 - **Project Leader:** Assoc. Prof. Dr. Norwati Mustapha
 - **Project Number:** 08-01-14-1481FR
 - **Grand Total Price:** RM 115’900

Work Experience:

- Systems and Process Expert in Culture and Art Organization of Tehran Municipality. (2006 - 2009)
- Web Developer(frontEnd) in ICRIC project: (2011)
- PHP Developer(junior) in brandPasar project:(2012)
- Web and Mobile Developer in firework solution (2102-2013)
- Research Assistant in University Putra Malaysia (2013-2017)
- Teaching Assistant in Data Science | Big Data Analytics at UPM (February-2017)

Referees:

Assoc. Prof. Dr. Norwati Mustapha

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Hamed Riahi

Senior Software Engineer at SDL

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