

# Curriculum Vitae for Dr. Omar Alibrahim

## 1. Personal Details

Name	Rank	Tenure Status
Omar Al Ibrahim	Assistant Professor	Tenure Track

Current Affiliation	Kuwait University
Email	omar.alibrahim@ku.edu.kw
Phone Number	Mobile: 65857890, Office: 24633269
ORCID ID	0000-0002-3902-2528

## 2. Education

Degree	Discipline	Institution	Year
PhD	Computer Science	Southern Methodist University, USA	2007-2012
MSc	Computer Science	Rice University, USA	2005-2007
BSc	Computer Engineering	Kuwait University, Kuwait	2000-2004

## 3. Academic Experience

Institution	Rank	Title	When	Full/Part Time
University of Buffalo (SUNY)	Assistant Professor	Visiting Scholar	2016-2017	Full Time
Kuwait University	Assistant Professor	Assistant Professor	2014 - present	Full Time, Tenure-Track

## 4. Non-Academic Experience

Company or Institution	Title	Brief description of position	When	Full Time / Part Time
KoutLabs (non-profit)	Security Researcher	Research & development (R&D) in cybersecurity	2020-present	Full Time
Lookout Inc.	Security Researcher	Reverse engineering mobile applications & cyber-threat intelligence.	2017-2018	Full Time
Virtual Security Research (VSR), LLC. (USA)	Security Consultant	Web application and network penetration testing to various clients.	2013-2014	Full Time

Cigital Inc. (USA)	Security Consultant	Vulnerability assessment and remediation guidance.	2012-2013	Full Time
Globeranger Inc.	.NET developer / researcher	Develop demos for RFID asset tracking and NSF research project on RFID authentication.	2009-2010	Internship
Verizon Data Services Inc.	.NET developer	Developed metrics site, logger, and reporting tool for large-scale ordering application.	2008-2008	Internship

## 5. Certifications

Program	when	Institution
GIAC Reverse Engineer Malware certified (GREM)	2013	GIAC
Certified Information Security Professional (CISSP)	2011	ISC <sup>2</sup>

## 6. Memberships

Professional Organization	Title	When
IEEE	Member	2004
OWASP	Life-time Member	2013

## 7. Honors and Awards

Honor / Award	Awarded by	when
Kent Fuka Graduate Research Award	Southern Methodist University, USA	2011
SMU Graduate Student Award	Southern Methodist University, USA	2011
The National Dean List Award	Rice University, USA	2007
The Chancellor's List	Rice University, USA	2005-2006

## 8. Committees and Administrative Experience

Name of Service	Institution	Title	when
Student Advising Committee	Dept. of Information Science, Kuwait University	Member	2022-2023 2021-2022

Social Committee	Dept. of Information Science, Kuwait University	Member	2022-2023 2021-2022
Ethics Review Committee	Dept. of Information Science, Kuwait University	Vice-Chair	2019-2020
Research Committee	Dept. of Information Science, CCSE, Kuwait University	Member	2019-2020 2014-2015
Scholarship Committee	Department of Information Science, CCSE, Kuwait University	Member	2015-2016
Assessment and Improvement Committee	Department of Information Science, CCSE, Kuwait University	Member	2015-2016

## 9. Courses Taught

Course Title	Description	When
ISC 499 – Capstone Project	This course constitutes a capstone design experience in information and computer systems. Typically it would require the student to build on the aggregated knowledge gained in previous years of study. Students will have hand-on experience in designs of real life projects involving software and/or hardware.	Fall2014
ISC 495- Internship	Opportunity for students to gain practical experience of the workplace relevant to their major with employers in the public or private sectors. Internships are intended to match the academic background and strengths of students, their interests and future career ambitions.	Fall2014 Spring2016
ISC 353 – Information Security Systems	This course introduces the fundamentals of computer and information security. The course covers the security issue in different contexts like the standalone PC, the network, and the Internet. Topics include the basics of encryption, firewalls concepts and practices, and the different types of viruses and worms and methods of their detection and destruction.	Spring2015 Fall2015 Fall2018 Spring2019 Fall2021 Spring2022
ISC 105 – Computers and Society	The focus of this course is on the impact of information technology on the local and global cultures. The course provides the students with the effect of current and emerging technologies on daily lives, social relations, work, and government. Topics covered include: ethical and legal issues (data privacy, intellectual property rights, computer misuse, and freedom of speech on the internet), society and cultural changes, the use of technology to support education, business, communications, and government.	Fall2019 Fall2020

ISC 100 – Fundamentals of Personal Computers	In this course, students will be exposed to all computer components: Hardware and software. Examination of current information technology application software packages with practical experience of current, popular and commercially available microcomputer application packages for word processing, spreadsheets, and presentations. Students will use such packages to enhance their professional presentation skills.	Fall2014 Spring2015
CLS 107 – College Algebra	This course examines fundamentals of algebra and its application to the real world situations, polynomials, rational expressions, complex numbers, systems of linear equations, elementary matrices and their applications.	Fall2015 Spring2021 Spring2022
CLS 108 – Applied Calculus	This course reviews areas of basic mathematics such as trigonometry, analytical geometry in two dimensions, linear equations, functions and their graphs, derivatives and its geometric interpretation, simple integration and its application. (Problems will be focused on the following areas: Food nutrition, information technology, environmental sciences, etc.).	Spring2019 Fall2019 Spring2020 Fall2020 Spring2021 Fall2021 Fall2022
CLS 130 - Ethics and Practices	This course examines the ethical duties of professional practice in such fields as architecture, business, environmental sciences, nutrition, etc. Focus is placed on case studies which evoke conflicts between personal convictions and public responsibilities.	Fall2022

## 10. Research Experiences & Interests

Research Areas	Description	Role	Dates
Social networks and IoT security	Investigate cybercrime methods in social networks. Analyze IoT devices including drones to identify security flaws.	Principal investigator	2020-present
Blockchain security	Research cyber-attacks and defenses on the blockchain	Principal investigator	2013-present
Malware analysis & threat intelligence	Analyze the static and dynamic behavior of malware and association with threat actors.	Researcher	2016-present
Security of Resource-Constrained Environments	Security of devices with scarce resources: including RFID, sensors, and IoT	Graduate student	2007-2012
Geo-Encryption	Encryption techniques using GPS for location-based security.	Graduate student	2004-2007

## 11. Grants Awarded

Grant Title	Description	Grantor	Dates	Amount
ZQ01/15: Building Secure Digital Wallet for Bitcoin	Research how to build a secure wallet application for Bitcoin and cryptocurrency.	Kuwait University	3/2015-7/2016	2000 KWD
RX02/18: Abusing smart contracts and blockchain for botnet command & control	Research how hackers may exploit public blockchain and applications built on top of them to build unassailable botnets.	Kuwait University	5/2019-4/2022	3500 KWD

## 12. Research Publications

### a) Journals:

Title of Publication	Author	Journal	Impact Factor	Quartile Ranking	Year	Citation
Botrtract: Abusing smart contract and blockchain for botnet command and control	O. Alibrahim and M. Malaika	International Journal of Information and Computer Security (IJICS)	5.2	Q4	2022	1
State machine-based security fusion for resource constrained environments	S. Nair, O.Alibrahim & S. Abraham	IEEE Systems Journal	4.8	Q2	2012	4
Geo-Encryption Protocol For Mobile Networks	A. Al Fuqaha & O. Al Ibrahim	Special Issue on Security on Wireless Ad Hoc and Sensor Networks, Computer Communications	5.047	Q2	2007	36

### b) Conferences:

Title of Publication	Author	Conference Proceedings	Year
Adventures in Drone Hacking and Forensics	Omar Alibrahim & Basel Alothman	BlackHat MEA <a href="https://blackhatmea.com/node/536">https://blackhatmea.com/node/536</a>	2022

RAT Exploitation for Social Networks	Omar Alibrahim & Basel Alothman	BlackHat Europe Arsenal <a href="https://www.blackhat.com/eu-21/arsenal/schedule/">https://www.blackhat.com/eu-21/arsenal/schedule/</a>	2021
Qoi: Assessing participation in threat information sharing	Jemon Park, Hisham Alasmay, Omar Al-Ibrahim, Charlies Kamhoua, Kevin Kwiat, Laurent Njilla, Aziz Mohaisen	IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)	2018
Rethinking information sharing for threat intelligence	Aziz Mohaisen, Omar Al-Ibrahim, Charles Kamhoua, Kevin Kwiat, Laurent Njilla	ACM/IEEE Workshop on Hot Topics in Web Systems and Technologies	2017
Assessing quality of contribution in information sharing for threat intelligence	Aziz Mohaisen, Omar Al-Ibrahim, Charles Kamhoua, Kevin Kwiat, Laurent Njilla	IEEE Symposium on Privacy-Aware Computing (PAC)	2017
Xml schema, dtd, and entity attacks	Timothy D Morgan, Omar Al Ibrahim	Virtual Security Research, LLC, Tech. Rep	2014
Security Fusion: A New Security Architecture for Resource-Constrained Environments.	Suku Nair, Subil Abraham, Omar Al-Ibrahim	Hotsec, Usenix Security	2011
Cyber-physical security using system-level PUFs	Omar Al Ibrahim, Suku Nair	International Wireless Communications and Mobile Computing Conference	2011
Mobility support for geo-encryption	Omar Al-Ibrahim, Ala Al-Fuqaha, Doug Van Dyk, Nolen Akerman	IEEE International Conference on Communications	2007
A mobility model of GPS-based encryption	Ala Al-Fuqaha, Omar Al-Ibrahim, Joe Baird	IEEE Global Telecommunications Conference, 2005.	2005

c) **Patents:**

Patent Title	Patent Number	Inventors	Description	Date Awarded
Improved Security for Any Database	USPTO 63/379041	Omar Alibrahim, Majid Malaika, Tim Rude	Novel device, methods, computer programs that provide real-time monitoring and incident response to ensure secure and fraud-free execution of smart contracts on top of distributed ledger technology.	Pending