### Mohammed Shaya Baihan

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# **EDUCATION**

- Degree of Philosophy, Computer Science and Engineering, August 2018, University of Connecticut, USA, GPA 3.83
- Master of Science, Advanced Computer Science: with specialization in Computer Security, November 2011, University of Manchester UK, GPA 3.83
- Bachelor of Education, Computer Science, June 2005, King Saud University, GPA 3.52

# ACADEMIC EXPERIENCE

- Assistant Professor, Computer Science Department, Community College, King Saud University, Riyadh, 2018 to present.
- Lecturer, Computer Science Department, Community College, King Saud University, Riyadh, 2014 to 2018.
- Teaching Assistant, Computer Science Department, Teaching College, King Saud University, Riyadh, 2008 to 2014.
- Teaching Assistant, Computer Science Department, Teaching College, King Faisal University, Dammam, 2005 to 2008.

## TOOLS AND PROGRAMS

- Personal health assistant (PHA)
  - Lead a group of 4 graduate students to build an Android application (PHA) which is developed for medical management and reconciliation.
- SpoofGuard++
  - An Internet Explorer (version 4 and later) toolbar or add-on which is developed in C# programming language to help Internet Explorer users to identify phish (fake) web pages that they may visit.
- A modified SVM algorithm
  - Using Matlab, implement a modified support vector machine (SVM) algorithm to cope with the problem of bad quality labels. This algorithm tries to reduce the weights of bad labels during the training phase to produce a good learning model.
- Learning from GitHub repositories
  - Using Python and Matlab, collecting information about a large number of GitHub repositories (more than 15000 repositories) and train three models that can predict the number of stars, the number of watchers, and the number of forks for new GitHub repository.

# **OPEN SOURCE CONTRIBUTIONS:**

- Contribution to OpenSSL library (C)
  - Add masking protection code to the core codes of Advanced Encryption Standard (AES) to mitigate Side Channel Attacks.
- Contribution to HAPI FHIR library (JAVA)
  - Augment the HAPI FHIR library with security features so that the behavior of applications that accessing RESTfull services (that are created using HAPI FHIR library) can be controlled using three types of access control models (RBAC, MAC, and DAC)

### PUBLICATIONS

- 1. **Baihan, M.**, Sánchez, Y., Shao, X., Gilman, C., Demurjian, S., & Agresta, T. (2018). A Blueprint for Designing and Developing M-Health Applications for Diverse Stakeholders Utilizing FHIR. In R. Rajkumar (Ed.), Contemporary Applications of Mobile Computing in Healthcare Settings (pp. 85-124). Hershey, PA: IGI Global.
- 2. **Baihan, M.**, and Demurjian, S. (2017). A Framework for Secure and Interoperable Cloud Computing. In Research Advances in Cloud Computing, S. Chaudhary (ed.), Springer.
- Baihan, M., Demurjian, S., Rivera Sánchez, Y., Toris, A., Franzis, A., Onofrio, A., Cheng, B., & Agresta, T. (2017). Role-Based Access Control for Cloud Computing Realized within HAPI FHIR. Proceedings of 16th International Conference on WWW/INTERNET 2017 (ICWI 2017).
- 4. Rivera Sánchez, Y., Demurjian, S., & **Baihan, M.** (2017). Achieving RBAC & MAC on RESTful APIs for Mobile Apps using FHIR. Proceedings of the 5th IEEE International Conference on Mobile Cloud Computing, Services, and Engineering.
- 5. Ziminski, T. B., Demurjian, S. A., Sanzi, E., **Baihan, M.**, and Agresta, T. (2017). An Architectural Solution for Health Information Exchange. International Journal of User-Driven Healthcare (IJUDH), 6(1), 65-103.
- 6. Rivera Sánchez, Y., Demurjian, S., & **Baihan, M.** (2017). A Service-Based RBAC & MAC Approach Incorporated into the Fast Healthcare Interoperable Resources (FHIR) standard. Submitted to The Digital Communications and Networks Journal, special issue on the Security, Privacy, and Digital Forensics of Mobile Networks and Mobile Cloud.
- 7. Baihan, A., Duggirala, P. S., & **Baihan, M** (2017). A High-order Masking Approach for CLEFIA Implementation on FPGA and Intel. Proceedings of International Conference on Security and Management (SAM 2017).
- 8. Alfarraj, O., Baihan, A., & **Baihan, M.** (2015). Design and development of a smart sensing kit for the detection of accident location using smart phone. Sensor Letters volume 13 number 5, pp. 365-370(6).
- 9. **Baihan, M**. "An Anti-Spoofing Tool: Spoofguard++". Master dissertation (2011), the University of Manchester, UK.
- 10. **Baihan, M**. "A Framework for Secure and Interoperable Cloud Computing with RBAC, MAC, and DAC". Ph.D. dissertation (2018), the University of Connecticut, USA.