

IMAN SALEH

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Computer Scientist with PhD in Software Engineering, CIPP/US, a strong data and privacy background and 16+ years of experience in developing software systems. Interested in both R&D and engineering opportunities in privacy-preserving solutions, bridging the gap between technology, and legal and ethical compliance.

EXPERIENCE

2017 – PRESENT

RESEARCH SCIENTIST FOR AUTONOMOUS DRIVING, INTEL

- Conducting research, architecting solutions and building prototypes for autonomous driving focusing on data assurance. That includes designing processes for data quality, trust and compliance with privacy regulations
- Leading an effort to build an ethical AI toolkit that provides privacy-preserving computer vision capabilities
- Technologies include: Deep Learning, Generative Adversarial Networks, RESTful Web Services

2015 – 2017

DEVELOPER EVANGELIST AND PRODUCT MANAGER, INTEL

- Managing the Trusted Analytics Platform (TAP); a software platform focusing on delivering secure and trusted solutions for Big Data analytics
- Evangelizing Intel technologies by developing technical contents, demos, code walkthroughs and reaching out to developers in conferences and technical events
- Technologies include: High Performance Computing, Big Data Analytics, Machine Learning

2012 – 2014

ASSISTANT SCIENTIST, UNIVERSITY OF MIAMI

- Conducting research in the areas of online workflows optimizations, Big Data for genomics, Crowdsourcing and Energy-Aware Software Solutions
- Implementing prototypes, algorithms and tools in the area of Software Engineering focusing on the formal specification and verification of Big Data applications, automatic test case generation for data-driven software, privacy-preserving solutions, and machine learning techniques
- Supporting research at the medical school by providing technical consulting on management of genome databases and privacy-preserving solutions for genomics data
- Contributing to basic and applied research activities including authorship of scientific publications, technical reports, and NSF grant proposals
- Consulting for a STEM education program in public middle schools
- Teaching Software Engineering classes
- Technologies include: Hadoop, neo4j graph databases, and MongoDB

2011 – 2012

SOFTWARE ENGINEER AND SCRUM MASTER, ROSETTA STONE

- Optimizing processing of large amount of data. Achieved 40% performance gain on reporting
- Designing and architecting Service-Oriented Learner Management infrastructure. Proposing APIs, mockups and integration plans
- Planning tasks, identifying and resolving impediments, and tracking team progress
- Technologies include: Ruby on Rails, Flex, MongoDB, MySQL, SOAP and RESTful Web Services

2006– 2010

GRADUATE RESEARCH ASSISTANT, VIRGINIA TECH

- Conducting research in the areas of Formal Methods, Software Specification and Verification, Testing Methodologies, Data Modeling and Service Oriented Computing
- Using state-of-the-art specification and verification tools and languages including: Spec#, C# Contract, Dafny, Resolve, Z, Boogie, Java Modeling Language, ESC/Java
- Designing and developing testbeds for Service Oriented Computing environments. Presenting research findings at scientific conferences
- Assisting in teaching graduate courses
- Technologies include: C#, , Spec#, WSDL, SOAP, XML and Java Agent Framework

2004– 2005

SENIOR SOFTWARE ENGINEER AND TECH LEAD, BIBLIOTHECA ALEXANDRINA

- Designed and assisted in the implementation of a digital assets repository for Bibliotheca Alexandrina (<http://dar.bibalex.org/>). The system integrates the digitization process with the preservation, archiving and public access to the library collections. The implementation is based on evolving standards like XML and Web services
- Managed a team of software developers and graphics designers in the design and implementation of an automation system for the digitization of the library collections

2002– 2004

SOFTWARE ENGINEER, BIBLIOTHECA ALEXANDRINA

- Designed and implemented various software solutions for the library. Solutions included an automated book labeling system, an access control system integrated with the library's bibliographic database and a smart card payment system. Developed a Web-based reporting tool that is consulted by the library managers. The project included data gathering, files parsing, building necessary views and packages on Oracle database and using data warehousing techniques to optimize the response time
- Performed software system integration across heterogeneous platforms, including Windows, UNIX, Linux and Solaris.
- Administered the library bibliographic database, implemented on Oracle
- Testing and debugging of various systems and applications
- Developed and maintained documentation
- Provided technical support for end-users including training on new software, workflow definition and troubleshooting
- Technologies include: Java, C++, PL/SQL, C# and ASP .Net

EDUCATION

MAY 2012

PHD IN COMPUTER SCIENCE, VIRGINIA TECH

Dissertation: "Formal Specification and Verification of Data-Centric Web Services"

Research Areas: Formal Methods, Data Modeling, Web Services, Automatic Testing

GPA: 3.8

DECEMBER 2010

MSC IN COMPUTER SCIENCE, VIRGINIA TECH

GPA: 3.8

MAY 2005

MSC IN COMPUTER SCIENCE, ALEXANDRIA UNIVERSITY, EGYPT

Thesis: "Privacy-Preserving Protocol for Association Rules Mining"

Research Areas: Data Mining, Cryptography

Grade: Distinction

MAY 2002

BSC IN COMPUTER SCIENCE, ALEXANDRIA UNIVERSITY, EGYPT

Graduation Project: "A Secure Email Service Based on Public Key Cryptography"

Grade: Distinction

SKILLS

Desktop and Web Development | Database Design and Query Optimization | Algorithms Design and Analysis | Debugging and Testing

Java | Python | Ruby on Rails | Flex | C# | C/C++ | PL/SQL | Transact-SQL | JSP | R

Java Spring Boot | Java Beans | Java Servlets | JavaScript | Junit | RESTful APIs | WSDL | Swagger
ASP | ASPX | XML | Visual Basic | HTML | CSS

Cryptanalysis Techniques | Symmetric and Public-Key Cryptography | Hashing Techniques

Microsoft Unit Test | Pex Parameterized Testing | JUnit

Hadoop | MongoDB | Oracle DBMS | Microsoft SQL Server | MySQL | Neo4j

CERTIFICATES AND TRAININGS

2018 Certified Information Privacy Professional (CIPP/US)

2016 Threat Modeling

2016 Databricks Scala and Spark Training

2016 Pragmatic Marketing Certificate

2015 Introduction to data science, building recommender systems

2015 Leading Technical Professionals

2014 NSF proposal writing workshop

2013 Microsoft certifications - Programming MS SQL Server 2000 Database

2013 Microsoft certifications - Administering MS SQL Server 2000 Database

2013 Microsoft certifications - Administering MS SMS Server

2003 Solaris Administration Training

2001 German Language Certificate (Zertifikat Deutsch)

1995 French Language Certificate (Alliance Française)

1990 Certificate in Computer Studies – Basic Programming

HONORS AND AWARDS

- 2016 Intel Developer Programs and Strategic Alliances Excellence Award
- 2013 and 2014 Google travel and conference grant
- 2010 Inductee, Upsilon Pi Epsilon Honor Society for Computer Science
- 2010 The Grad Cohort Workshop Invitation and Travel Award
- 2010 Graduate Student Assembly Travel Award
- 2009 NSF Student Travel Grant
- 2003 Best Employee Award at Bibliotheca Alexandrina
- 2002 Graduation Distinction Honor, Alexandria University
- 1998 to 2002 Distinction Award, Alexandria University

PUBLICATIONS

BOOK

- **Iman Saleh**, "Formalizing Data-Centric Web Services", Web-Scale Workflow and Analytics, SpringerBriefs, 2015

JOURNALS AND MAGAZINES

- Julian Jarrett, Brian Blake, **Iman Saleh**, "Crowdsourcing, Mixed Elastic Systems and Human-Enhanced Computing—A Survey", IEEE Transactions on Services Computing, February 2017
- Peter Bartalos, Yi Wei, M Brian Blake, Haluk Damgacioglu, **Iman Saleh**, Nurcin Celik, "Modeling Energy-Aware Web Services and Application", Journal of Network and Computer Applications, vol. 67, pp. 86-98, May 2016
- M. Brian Blake, **Iman Saleh**, Yi Wei, Ian D. Schlesinger, Alexander Yale-Loehr, and Xuanzhe Liu, "Service Recommendations from Software Specifications: A Hybrid Syntactic and Semantic Approach", Journal of Information and Software Technology, vol. 57, pp. 392-404, January 2015
- **Iman Saleh**, M.Brian Blake, Gregory Kulczycki and Yi Wei, "Formal Methods for the Specification and Testing of Data-Centric Web Services: A Case Study", the International Journal of Services Computing, vol. 1, no. 1, pp.39-51, Oct.-Dec. 2013
- Wei Tan, M. Brian Blake, **Iman Saleh**, and Schahram Dustdar: "Social-Network-Sourced Big Data Analytics", IEEE Internet Computing, vol.17, no.5, pp.62-69, Sept.-Oct. 2013, *featured by the Special Technical Community on Social Networks*
- **Iman Saleh**, M.Brian Blake and Gregory Kulczycki, "Demystifying Data-Centric Web Services", Internet Computing, IEEE , vol.13, no.5, pp.86-90, Sept.-Oct. 2009
- **Iman Saleh**, Mohamed Eltoweissy, Adnan Agbaria and Hesham El-Sayed : "A Fault Tolerance Management Framework for Wireless Sensor Networks", Journal of Computers, Vol. 2, No. 4, June 2007
- **Iman Saleh** and Mohamed Eltoweissy: "P3ARM-t: Privacy-Preserving Protocol for Association Rule Mining with t Collusion Resistance", Journal of Computers, Vol. 2, No. 2, April 2007

CONFERENCES

- **Iman Saleh**, and Khaled Nagi, "HadoopMutator: A Cloud-Based Mutation Testing Framework", 14th International Conference on Software Reuse, ICSR'15, January 2015
- Mohamed Abdellatif, **Iman Saleh**, and M.Brian Blake, "JPrivacy: A Java Privacy Profiling Framework for Big Data Applications", International Workshop on Collaborative Big Data, October 2014
- Julian Jarrett, **Iman Saleh**, M. Brian Blake, Rohan Malcolm, Sean Thorpe, and Tyrone Grandison, "Combining Human and Machine Computing Elements for Analysis via Crowdsourcing", 10th

- IEEE International Conference on Collaborative Computing: Networking, Applications and Worksharing, CollaborateCom'14, October 2014
- Muhammad Nassar, Julian Jarrett, **Iman Saleh** and M. Brian Blake, "Generating Real-Time Profiles of Runtime Energy Consumption for Java Applications", 26th International Conference on Software Engineering and Knowledge Engineering, SEKE'14, July 2014
 - **Iman Saleh**, Gregory Kulczycki, and M.Brian Blake, "Towards the Implementation of Bug-Free Database Applications: A Formal Approach", First International SIGMOD Workshop on Reliable Data Services and Systems, (SIGMOD RDSS'14), June 2014
 - Julian Jarrett, **Iman Saleh**, M.Brian Blake, Sean Thorpe, Tyrone Grandison, and Rohan Malcolm, "Mobile Services for Enhancing Human Crowdsourcing with Computing Elements", IEEE 3rd International Conference on Mobile Services, MS'14, June 2014
 - Damian Clarke, **Iman Saleh** and M. Brian Blake, "Modeling Service Workflow Outcomes by Assessing the Underlying Message Flows", 23rd IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE'14), June 2014
 - **Iman Saleh**, Gregory Kulczycki, M.Brian Blake, and Yi Wei, "Static Detection of Implementation Errors Using Formal Code Specification", 11th International Conference on Software Engineering and Formal Methods (SEFM'13), Sept 2013
 - **Iman Saleh**, Gregory Kulczycki, M.Brian Blake, and Yi Wei, "Formal Methods for Data-Centric Web Services: From Model to Implementation", IEEE International Conference on Web Services (ICWS'13), IEEE Computer Society, June 2013
 - Yi Wei, M. Brian Blake, and **Iman Saleh**, "Adaptive Resource Management for Service Workflows in Cloud Environments", Second International Workshop on Workflow Models, Systems, Services and Applications in the Cloud (CloudFlow'13), in conjunction with the 27th IEEE International Parallel & Distributed Processing Symposium (IPDPS'13), May 2013
 - **Iman Saleh**, Gregory Kulczycki and M.Brian Blake, "Formal Specification and Verification of Transactional Service Composition", IEEE World Congress on Services, SERVICES'11, July 2011
 - **Iman Saleh**, Gregory Kulczycki and M.Brian Blake, "Formal Specification and Verification of Web Service Compositions", IEEE International Conference on Web Services (ICWS'10), IEEE Computer Society, July 2010 (acceptance rate 15.6%)
 - **Iman Saleh**, "Formal Specification and Verification of Data-Centric Web Services", IEEE Services' PhD Symposium, July 2010
 - **Iman Saleh**, Gregory Kulczycki and M.Brian Blake, "Specification and Verification of Web Services Transactions", PhD Workshop on Innovative Database Research, SIGMOD'10, June 2010
 - **Iman Saleh**, Gregory Kulczycki and M.Brian Blake, "A Reusable Model for Data-Centric Web Services", 11th International Conference on Software Reuse, September 2009
 - Khaled El-Goarany, **Iman Saleh**, Gregory Kulczycki. "The Social Service Network: Web 2.0 Can Make Semantic Services Happen". IEEE Joint Conference on E-Commerce Technology (CEC'08) and Enterprise Computing, E-Commerce and E-Services (EEE'08), July 2008
 - **Iman Saleh**, Hesham El-Sayed and Mohamed Eltoweissy: "A Fault Tolerance Management Framework for Wireless Sensor Networks" Proceedings of the IEEE Conference on Innovations in Information Technology (IIT'06), Dubai, November, 2006
 - **Iman Saleh**, Adnan Agbaria and Mohamed Eltoweissy: "Fault-Tolerant Mobile Sink in Networked Sensor Systems" 3rd Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON'06), Reston, Virginia, 25 – 28 September, 2006
 - **Iman Saleh**, Adnan Agbaria and Mohamed Eltoweissy: "In-Network Fault Tolerance in Networked Sensor Systems" Proceedings of the 2nd ACM/SIGMOBILE Workshop on Dependability Issues in Wireless Ad Hoc Networks and Sensor Networks, Los Angeles, California, 25 September 2006

- **Iman Saleh**, Alaa Mokhtar, Amin Shoukry and Mohamed Eltoweissy: "P3ARM: Privacy-Preserving Protocol for Association Rule Mining" Proceedings of the 7th Annual IEEE Information Assurance Workshop, United States Military Academy, West Point, New York, 21-23 June 2006
- **Iman Saleh**, Noha Adly and Magdy Nagi: "DAR: A Digital Assets Repository for Library Collections" Proceedings of the 9th European Conference on Digital Libraries (ECDL'05), September 2005

TEACHING

UNIVERSITY OF MIAMI

Fall 2014, Spring 2014 and Spring 2013 Introduction to Software Engineering

VRIGINIA TECH

Fall 2007 [TA] Network and Computer Security

SERVICE

LOCAL CHAIR

2015 The 14th International Conference on Software Reuse (ICSR)

PROGRAM CO-CHAIR

2014 and 2015 The 12th International Conference on Service-Oriented Computing (ICSOC), Demonstration Track

2015 The 12th Adaptive Computing for Enhanced Collaboration (ACEC),

2014 The 14th International Conference on Software Reuse (ICSR)

PROGRAM COMMITTEE MEMBER

2015, 2016 and 2018 The International Conference on Software Reuse (ICSR)

2014, 2015 and 2018 The 12th International Conference on Service-Oriented Computing (ICSOC)

2015 IEEE CLOUD

2015 IEEE International Conference on Enabling Technologies (WETICE)

2015 IEEE WEB 2.0 Security and Privacy Workshop (W2SP)

2013 and 2014 Analyzing and Improving Collaborative eScience with Social Networks (eSoN)

2013 International Workshop on Designing Reusable Components and Measuring Reusability

LANGUAGES

English speak fluently and read/write with high proficiency

Arabic speak fluently and read/write with high proficiency

French speak fluently and read/write with high proficiency

German speak, read/write with basic competence