

## **SALAM HAJJAR, Ph.D.**

*Electrical and Computer Engineering*

### **PROFESSIONAL EXPERIENCE**

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<b>Assistant Professor</b> Electrical and Computer Engineering	<b>Beckley, WV, USA</b> (Fall 2020–Present)
<b>Assistant Professor</b> Electrical and Computer Engineering	<b>Huntington, WV, USA</b> (Fall 2016 – Spring 2020)
<b>Postdoctoral Research Associate</b> Advisor: Marcos Moreira; Associate Professor, Joao Basilio; Professor Automatic Control, Federal University of Rio de Janeiro, Brazil	<b>Rio de Janeiro, Brazil</b> (2015 – 2016)
<b>Postdoctoral Research Associate</b> Advisor: Antoneta Bratcu; Associate Professor Automatic Control & Mechanical Engineering, National Institute of Polytech	<b>Grenoble, France</b> (07/2014–01/2015)
<b>Associate Instructor-Researcher</b> Head of Department: Julien Fondrevelle; Professor Industrial Engineering, National Institute of Applied Sciences	<b>Lyon, France</b> (11/2012–06/2014)
<b>Research Assistant</b> Advisor: Lionel Brunie; Professor Informatics, National Institute of Applied Sciences	<b>Lyon, France</b> (02/2009–06/2009)
<b>Electrical- Computer Engineer</b> Head of Department: Soheil Khawatmi; Assistant Professor Computer Science, University of Aleppo	<b>Aleppo, Syria</b> (09/2006 – 08/2007)

### **EDUCATION**

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<b>Ph.D. in Automatic Control-Embedded System</b> National Institute of Applied Sciences <b>Dissertation:</b> Safe Design Method of Embedded Systems Based on COTS	<b>Lyon, France</b> (10/2009-7/2013)
<b>M.S. in Web &amp; Information Technologies</b> National Institute of Applied Sciences <b>Dissertation:</b> A Discussion of Various Problems in Privacy Preserving Reputation Systems	<b>Lyon, France</b> (09/2008–06/2009)
<b>M.S. in Computer Science</b> University of Aleppo & National Institute of Applied Sciences	<b>Aleppo, Syria</b> (09/2007–06/2008)
<b>Bachelor in Electrical &amp; Electronic Engr.- Concentration: Computer Engr.</b> University of Aleppo	<b>Aleppo, Syria</b> (09/2001–06/2006)

### **AWARDS AND HONORS**

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<b>Science Without Borders</b> Research Scholarship, 2 Semesters	<b>Rio de Janeiro/Brazil</b> (02/2015-2016)
<b>National Conference of Sciences</b> Best Poster Award	<b>Dijon/France</b> (06/2013)
<b>2<sup>nd</sup> National Conference of Software Engineering</b>	<b>Nancy/France</b>

Best Paper Award	(04/2013)
<b>French Ministry of Industry</b>	<b>Lyon, France</b>
Research Scholarship, 8 Semesters	(10/2009-2013)
<b>National Institute of Applied Sciences</b>	<b>Lyon/France</b>
Industrial Engr. Department Research Award	(06/2014)
Industrial Engr. Department Research Award	(12/2013)
Industrial Engr. Department Research Award	(06/2013)
Industrial Engr. Department Research Award	(12/2012)

## RESEARCH PROJECTS

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<b>National Institute of Polytech</b>	<b>Grenoble, France</b>
Smart Energy Project	(06-12/2014)
<b>French Ministry of Industry &amp; Bombardier Transport</b>	<b>Paris, France</b>
Design of Railway Systems Based on Commercial off the Shelf	(10/2009-09/2012)

## TEACHING EXPERIENCE

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Microprocessor	Instructor	(01/2018 – present)
Computer Architecture	Instructor	(01/2018 – present)
Independent Study (web-design)	Instructor	(01/2018 – present)
Computer engineering concepts and design	Instructor	(01/2018 – present)
Engineering Profession	Instructor	(08/2017 – present)
Introduction to Digital Design	Instructor	(08/2017 – 12/2017)
Adv. Engineering Analysis	Instructor	(08/2017 – 12/2017)
Programming lab.	Instructor	(01/2017 – 05/2017)
Electrical Circuits II	Instructor	(08/2016 – 05/2017)
Mechanical Engineering Analysis	Instructor	(08/2016 – 12/2016)
Dynamic of Physical Systems, PID-Corrector	Instructor	(11/2012 – 06/2014)
Simulation of Hardware Systems / MATLAB	Instructor	(11/2012 – 06/2014)
Unified Modeling Language	Instructor	(11/2012 – 06/2014)
Computer Automated Design / Automation Project	Instructor	(09/2013 – 06/2014)
Chain of Control / Sensors & Captures	Instructor	(09/2013 – 06/2014)
Real Time Systems	Instructor	(09/2013 – 06/2014)
Signal Processing	Instructor	(09/2014 – 12/2014)
Control of Hardware/Discrete Systems	Instructor	(09/2014 – 12/2014)

## TEACHING INTERESTS

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Design of Embedded Systems  
 Digital Integrated Circuits  
 Microprocessor Design  
 Microcontrollers  
 Computer Architecture & Design  
 Robotics / Automation  
 Security of Information Systems  
 Software Engineering  
 Algorithms and Data Structure  
 Computer logic

Data Bases  
Graphic Systems  
Operating systems  
Programming languages: C/C++/C#, JAVA

## **JOURNAL PUBLICATIONS**

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- S. Hajjar**, T. Spears. Hardware Microprogramming Education Using Raspberry PI and Arduino Technologies. International Journal of Intelligent Information Systems.
- S. Hajjar**, E. Dumitrescu, L. Pietrac, E. Niel. Synthesizing Safe Control-Command Systems out of Reusable Components. Control Engineering Practice, Elsevier, 2015, 44, pp.243-259
- S. Hajjar**, E. Dumitrescu, E. Niel. Conception Sûre de Systèmes de Contrôle-Commande Matériels à Base de COTS<sup>1</sup>, European Journal of Automated Systems. volume 47 n° 1-3/2013 1-260, pp. 93-107
- S. Hajjar**, E. Dumitrescu, E. Niel. Safe Design Method of Control Embedded Systems: Case Study, European Journal of Automated Systems. volume 47 n° 1-3/2013 1-260, pp. 403 – 421

## **CONFERENCE PRESENTATIONS**

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- S. Hajjar**, Y. Sardahi, Arduino-based implementation of an adaptive autopilot system, IEEE - National Aerospace & Electronics Conference NAECON **2019**, Dayton OH
- S. Hajjar**, Safe Design of Controller for Smart Communicating Vehicles, IEEE - National Aerospace & Electronics Conference NAECON **2018**, Dayton OH.
- P. Cong, **S. Hajjar**, Mitigating Forwarding Misbehaviors in RPL-based Low Power and Lossy Networks, IEEE Consumer Communications & Networking Conference 12-15 January **2018**, Las Vegas USA.
- T. Bihl, **S. Hajjar**, Electricity Theft Concerns within Advanced Energy Technologies. IEEE, NAECON **2017**, Dayton OH.
- S. Hajjar**, A. Bratcu, A. Hably. A Day-ahead Centralized Unit Commitment Algorithm for A Multi-agent Smart Grid. Federated Conference on Computer Science and Information Systems. 13-16 Sep, **2015**, Lodz, Poland
- S. Hajjar**, E. Dumitrescu, L. Pietrac, E. Niel. A Design Method for Synthesizing Control-Command Systems out of Reusable Components. 14<sup>th</sup> International Workshop of Discrete Event Systems (WODES) 14-16 May **2014**, Cachan, France
- S. Hajjar**, E. Dumitrescu, E. Niel. Safe Design Method for Train Systems. 12<sup>th</sup> Conference of Embedded Real Time Systems 1-3 Feb **2012**, Toulouse, France
- S. Hajjar**, E. Dumitrescu, E. Niel. A Safe Design Method for Embedded Control Systems. 2<sup>ème</sup> Conférence d'Ingénierie de Logiciel<sup>2</sup>. pp. 35-45, 2-4 April **2013**, Nancy, France

## **CONFIDENTIAL TECHNICAL REPORTS – BOMBARDIER TRANSPORT**

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- S. Hajjar**, E. Dumitrescu, L. Pietrac, E. Niel. Design of Safe Embedded Systems. March **2012**
- S. Hajjar**, E. Dumitrescu, E. Niel. Synthesis of a Controller for Secured Physical Systems. July **2011**

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<sup>1</sup> Safe Design of Control-Command Hardware Systems

<sup>2</sup> 2<sup>nd</sup> National Conference of Software Engineering

**S. Hajjar**, E. Dumitrescu, E. Niel. Formal Verification and Control-Command of Embedded Systems. June **2010**

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## **POSTERS**

**S. Hajjar**, E. Dumitrescu, E. Niel. Safe Design Method of Embedded Systems. Industrial Systems Meeting. Superior National School of Art and Materials, 18 Nov **2012**, Paris, France

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## **BOOK CHAPTERS**

Book Chapter. Unit Commitment Control of Smart Grids. Big Data Analytics in Future Power Systems.

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## **REVIEW WORK**

Control Engineering Practice. (International Journal)

International Journal of Electrical Engineering Education (International Journal)

International Workshop of Discrete Event Systems (International Conference)

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## **MEMBERSHIPS & VOLUNTEERING**

IEEE Women in Engineering (WiE) - Chair of West Virginia Section - Region 2 – Eastern United States

IEEE Active member

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## **TEACHING LANGUAGES**

English

French

Portuguese

Linkedin profile: <https://www.linkedin.com/in/salam-hajjar-56451514/>