

RAMI J. HADDAD, Ph.D.

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Georgia Southern University
Allen E. Paulson College of Engineering and Information Technology
Department of Electrical Engineering
Statesboro, GA 30458
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EDUCATION

Ph.D., The University of Akron, USA (August 2011)

Major: Electrical and Computer Engineering

M.Sc., University of Minnesota Duluth, USA (May 2006)

Major: Electrical and Computer Engineering

Minor: Engineering Management

B.Sc., Applied Science University, Jordan (July 2004)

Major: Telecommunication and Electronics Engineering

Al-Quds University Community College, Jordan (May 2003)

Certified Electronic Devices Technician

AWARDS AND HONORS

- Received the **IEEE Senior Member** status in June, 2015.
- 2014-2015 Georgia Southern University IEEE Student Chapter **#1 Cheerleader Professor Award**.
- 2014-2015 Georgia Southern University Certificate of Excellence for **Sustainability**.
- 2009-2010 University of Akron ECE Dept. **Outstanding Graduate Researcher Award**.
- 2005-2006 University of Minnesota Duluth ECE Dept. **Outstanding Graduate Teaching Assistant Award**.
- 2004-2005 University of Minnesota Duluth ECE Dept. **Outstanding Graduate Teaching Assistant Award**.

SPONSORED PROJECTS

- ***National Science Foundation***
PI: Rami Haddad; April 1, 2015
“NSF Travel Grant – Engineering Sustainability Conference”
- ***Georgia Southern University Center for Sustainability***
PI: Frank Gross, Co-PI: Rami Haddad; December 1, 2014 to May 30, 2015
“Sustainable Wind Energy Harvesting from Campus AC Cooling Towers/Chillers”
- ***Georgia Southern University Center for Sustainability***
PI: Rami Haddad; August 1, 2014 to July 30, 2015
“Solar Powered Service Golf Carts”

- **Schweitzer Engineering Laboratories**
PI: Rami Haddad, Youakim Kalaani; January 1, 2014
“Synchrophasors in Smart Grid”
- **Faculty Research Seed Grants (CEIT-FRSG) program**
PI: Rami Haddad, Youakim Kalaani; January 1, 2014 to December 31, 2014
“Ultra-Fast, Autonomous, Reconfigurable Disaster Communication System”

LICENSURES AND CERTIFICATIONS

- Cisco Certified Network Associate (CCNA), Cisco Learning Network. (March, 2003).

PATENTS

- Hayee, M. I., **Haddad, R.**, “*Optical Communication System having Enhanced Spectral Efficiency using Electronic Signal Processing*” patent no. **8,478,131**, issued on July 2, 2013.

BOOKS

- Computing for Engineers, 2nd Edition, July, 2014 - *Authors:* Shonda Bernadin & **Rami J. Haddad**, Publisher: Kendall Hunt (ISBN: 978-146-525945-5).

JOURNAL ARTICLES

- **Haddad, R.**, Kalaani, Y.; “**Undergraduate Research Scholar: The First Step towards a Hybrid Lecture-Based and Inquiry/Research-Based Engineering Program**”, Technology Interface International Journal (TIIJ), vol. 15, no. 2, Spring/Summer 2015.
- El-Shahat, A., **Haddad, R.**, Kalaani, Y.; “**Wind Energy Estimation Functions for Future Homes**”, Journal of Power Technologies, (Accepted to be published in 2015).
- El-Shahat, A., **Haddad, R.**, Kalaani, Y.; “**Optimum ANN Empirical Model of Capacitive Deionization Desalination Unit**”, International Journal of Industrial Electronics and Drives (IJIED); vol. 2, no.2, pp. 116-133, 2015.
- El-Shahat, A., **Haddad, R.**, Kalaani, Y.; “**Lead Acid Battery Modeling for PV Applications**”, Journal of Electrical Engineering, ISSN 1582-4594, vol. 15, no. 2, pp. 17-24, 2015.
- Kalaani, Y., **Haddad, R.**, El-Shahat, A., “**PMSM Sensorless Speed Control Drive**”, Journal of Engineering Research and Technology, vol. 1, no. 4, pp. 132-142, Dec., 2014.
- **Haddad, R.**; McGarry, M., Seeling, P., “**Video Bandwidth Forecasting**”, IEEE Communications Surveys and Tutorials, vol. 15, no. 4, pp. 1803-1818, Fourth Quarter, April, 2013.
- **Haddad, R.**; McGarry, M., “**Feed Forward Bandwidth Indication (FFBI): Cooperation for an Accurate Bandwidth Forecast**”, Elsevier Journal of Computer Communications, Vol. 35, No. 6, pp. 748 – 758, Mar. 2012.

- Hayee, M. I., **Haddad, R.**, “**Enhancing Spectral Efficiency of Binary NRZ Optical Networks with Electronic Signal Processing**”, in IEEE/OSA Journal of Optical Networking, Vol. 5, Issue 9, pp. 655-661, Sept. 2006.

CONFERENCE ARTICLES

- El-Shahat A., **Haddad, R.**, Guha, B., Kalaani, Y., “**Sizing Residential Photovoltaic Systems in the State of Georgia**”, IEEE SmartGridComm Conference, Miami, FL, 2-5 November, 2015. (Accepted to be presented).
- Wallace, R.; Guha, B.; Santangelo, M.; Mitra, A.; **Haddad, R.**, “**Suspension Simulation Model Verification through Experimental Data for Lateral Force in Mini Baja Student Competition Car**”, Vibration Institute Annual Training Conference, 15-17 July 2015.
- **Haddad, R.**, Kalaani, Y., “**Flipping Homework: An Effective Homework Model**”, 2015 American Society for Engineering Education, ASEE Annual Conference and Exposition 14-17 June 2015.
- **Haddad, R.**, Kalaani, Y., “**A Novel Peer-Assisted Hybrid Flipped Classroom Model Using Online Discussion**”, 2015 American Society for Engineering Education, ASEE Annual Conference and Exposition 14-17 June 2015
- **Haddad, R.**, Kalaani, Y., Guha, B., “**Solar Golf Carts - A Practical Approach to Sustainability Awareness**”, Engineering Sustainability Conference 2015, 19-21 April 2015.
- Kalaani, Y., **Haddad, R.**, Nichols W., “**Feasibility/Environmental Analysis for a Photovoltaic Energy Systems for Commercial Buildings**”, Engineering Sustainability Conference 2015, 19-21 April 2015.
- Kalaani, Y., **Haddad, R.**, Purser, M., “**A Technical and Economic Feasibility Study of Implementing a Micro-grid at an Educational Institution**”, Engineering Sustainability Conference 2015, 19-21 April 2015.
- Kalaani, Y., **Haddad, R.**, Guha, B., “**A Hybrid Simulation and Hands-On Experimentation for Electric Machines Laboratory**”, American Society for Engineering Education, ASEE Southeastern Section Conference, Gainesville, FL, 12-14 April 2015.
- El-Shahat A., **Haddad, R.**, Kalaani, Y., “**Smart Grids Technology Fundamentals – A New Course Model**”, American Society for Engineering Education, ASEE Southeastern Section Conference, Gainesville, FL, 12-14 April 2015.
- **Haddad, R.**, Kalaani, Y., “**Cross Disciplinary Perceptions of the Computational Thinking among Freshmen Engineering Students**”, American Society for Engineering Education, ASEE Southeastern Section Conference, Gainesville, FL, 12-14 April 2015.
- Guha, B., **Haddad, R.**, Kalaani, Y., “**A Passive Islanding Detection Approach for Inverter-based Distributed Generation Systems Using Rate of Change of Frequency Analysis**”, IEEE Southeast Conference, Fort Lauderdale, FL, 19-21 April 2015.
- Bupe, P., **Haddad, R.**, Rios-Gutierrez, F., “**Relief and Emergency Communication Network Based on an Autonomous Decentralized UAV Clustering Network**”, IEEE Southeast Conference, Fort Lauderdale, FL, 19-21 April 2015.
- El-Shahat, A., **Haddad, R.**, Kalaani, Y., “**An Artificial Neural Network Model for Wind Energy Estimation**”, IEEE Southeast Conference, Fort Lauderdale, FL, 19-21 April 2015.
- Guha, B., **Haddad, R.**, Kalaani, Y., “**Performance Impact Analysis of Solar Cell Retrofitted Electric Golf Cart**”, IEEE Southeast Conference, Fort Lauderdale, FL, 19-21 April 2015.

- Guha, B., Haddad, R., Kalaani, Y., “**Anti-Islanding Techniques for Distributed Generation Systems – A Survey**”, IEEE Southeast Conference, Fort Lauderdale, FL, 19-21 April 2015.
- Haddad, R., Kalaani, Y., “**Can Computational Thinking Predict Academic Performance?**”, IEEE Integrated STEM Education Conference (ISEC), Princeton, NJ, March, 7, 2015.
- Guha, B., Haddad, R., Kalaani, Y., “**A Novel Passive Islanding Detection Technique for Converter-Based Distributed Generation Systems**”, IEEE Power & Energy Society (PES) Innovative Smart Grid Technologies (ISGT2015), 17-20 Feb. 2015.
- Purser, M., Kalaani, Y., Haddad, R., “**A Technical and Economical Study of Implementing a Microgrid System at an Educational Institution**”, IEEE Power & Energy Society (PES) Innovative Smart Grid Technologies (ISGT2015), 17-20 Feb. 2015.
- Guha, B.; Haddad, R., “**A Novel Passive Anti-Islanding Technique for Inverter-Based Distributed Generation Systems**”, Dr. Gregory P. Domin Graduate Research Conference, Oct., 15 2014.
- Haddad, R., Kalaani, Y., “**Undergraduate Research Scholar: The First Step towards a Hybrid Lecture-Based and Inquiry/Research-Based Undergraduate Electrical Engineering Program**”, 4th IAJC/ISAM Joint International Conference, Orlando, FL, 25-27 Sept. 2014.
- Haddad, R.; Robertson, A., “**Monitoring Optical Fiber Dispersion for Multimedia Applications**”, IEEE International Conference on Multimedia and Expo Workshops (ICMEW), Chengdu, China, 18th July 2014.
- Haddad, R., Kalaani, Y., “**Adaptive Teaching: An Effective Approach for Learner-Centric Classrooms**”, Proceedings of the 2014 American Society for Engineering Education, ASEE International Forum, 14 June 2014 (ASEE).
- Haddad, R., Kalaani, Y., “**Google Forms: A Real-Time Formative Assessment Approach for Adaptive Learning**”, Proceedings of the 2014 American Society for Engineering Education, ASEE Annual Conference and Exposition, 15-18 June 2014 (ASEE).
- Kalaani, Y., Haddad, R., “**A Unified Approach to the Assessment of Student Learning Outcomes in Electrical Engineering Programs**”, Proceedings of the 2014 American Society for Engineering Education, ASEE Annual Conference and Exposition, 15-18 June 2014 (ASEE).
- Haddad, R., Kalaani, Y., “**Gaming Against Plagiarism (GAP): A Game-Based Approach to Illustrate Research Misconduct to Undergraduate Engineering Students**”, Proceedings of the 2014 American Society for Engineering Education Southeast Section Conference, 30th March. 2014 (ASEE).
- Kalaani, Y., Haddad, R., “**Continuous Improvement in the Assessment Process of Engineering Programs**”, Proceedings of the 2014 American Society for Engineering Education Southeast Section Conference, 30th March. 2014 (ASEE).
- Robertson, A., Haddad, R., “**Monitoring Optical Fiber Dispersion**”, Proceedings of the 2014 American Society for Engineering Education Southeast Section Conference, 30th March. 2014 (ASEE).
- Robertson, A., Haddad, R., “**Optical Fiber Degradation Monitoring**”, 2nd Georgia Undergraduate Research Conference (GURC), Columbus, GA, 24-25 Jan. 2014.
- Haddad, R.; McGarry, M.; Luo, Yuanqiu, “**Forecast Grant Sizing for Video Delivery over Passive Optical Networks**”, IEEE International Conference on Multimedia and Expo Workshops (ICMEW), pp. 1-6, 15-19 July 2013.

- McGarry, M.; Seeling, P.; **Haddad, R.**; Hernandez, J., “**Accuracy of video frame size forecasting**”, IEEE International Conference on Electro/Information Technology (EIT), pp. 1–5, May 2012.
- McAlarney, J., **Haddad, R.**, McGarry, M., “**Modeling Network Protocol Overhead for Video**”, accepted at Internet Modeling, Semantic Web and Ontologies, European Modeling Symposium, Nov. 2010, (EMS).
- McGarry, M., **Haddad, R.**, McAlarney, J., “**A New Approach to Video Bandwidth Prediction**”, International conference on Ultra-Modern Telecommunication & Workshops, 2009 (ICUMT). pp. 1-5.
- Hassan, F., **Haddad, R.**, Khorbotly, S., “**Module-Based, Hands-On Experiments for Digital Communication Lab.**”, American Society for Engineering Education North Central Section Conference, 2009 (ASEE).
- **Haddad, R.**, “**Performance Monitoring for Automated Robust Optical Fiber Networks Using Bit-Stream Distribution Approximation**”, in CUGSR2008 Akron, Ohio 2008.
- **Haddad, R.**, Hayee, M. I., “**Spectral Efficiency of up to 1.6 bit/sec/Hz in Binary NRZ WDM Systems using Electronic Signal Processing**”, OSA Conference on Lasers & Electro-Optics & Quantum Electronics & Laser Science Conference. (CLEO/QELS) pp. 1-2, 2006.
- Hayee, M. I., **Haddad, R.**, “**Chirped RZ-DPSK Modulation Format in 40Gb/s WDM Transmission Systems**”, OSA Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science and Photonic Applications Systems Technologies. (CLEO/QELS), 1798-1800 vol. 3, 2005.

CONTRACTS, GRANTS AND SPONSORED RESEARCH

FUNDED

- Rami J. Haddad (**PI**), Title: “**Sun-Tracking Golf Cart’s Roof-Mounted Solar Panel for Improved Performance**”, Georgia Southern University Center for Sustainability, Award Amount: **\$2,114.29**. July 1st, 2015. (Co-PI: Youakim Kalaani, Frank Gross)
- Rami J. Haddad (**PI**), Title: “**NSF Travel Grant – Engineering Sustainability Conference**” Sponsored by the National Science Foundation, Award Amount: **\$500.00**, April, 2015.
- Rami J. Haddad (**PI**), Title: “**Senior Design Project Grant – Intelligent Traffic Light System**” Sponsored by the IEEE Savannah Section, Award Amount: **\$435.00**, January, 2015.
- Rami J. Haddad (**Co-PI**), Title: “**Sustainable Wind Energy Harvesting from Campus AC Cooling Towers/Chillers**”, Georgia Southern University Center for Sustainability, Award Amount: **\$11,014.88**. Dec., 2014. (PI: Frank Gross, Co-PI: Youakim Kalaani)
- Rami J. Haddad (**PI**), Title: “**Solar Powered Service Golf Carts**”, Georgia Southern University Center for Sustainability, Award Amount: **\$30,425.50**. May, 2014. (Co-PI: Youakim Kalaani, Frank Gross)
- Rami J. Haddad (**PI**), Title: “**Travel Grant – IEEE Region 3 Organizing Committee**” Sponsored by the IEEE Savannah Section, Award Amount: **\$1,509.52**, March, 2014.
- Youakim Kalaani, Rami J. Haddad (**PIs**), granted **\$25,000.00** in Smart Grid Research Equipment from Schweitzer Engineering Laboratories (SEL), January, 2014.
- Rami J. Haddad (**PI**), Title: “**Travel Grant for Faculty Development – 2014 ASEE Annual Conference**” Sponsored by the Georgia Southern University Center for Teaching, Learning and Scholarship, Award Amount: **\$345.00**, Oct., 2013.

- Rami J. Haddad (**PI**), Title: "**Ultra-Fast, Autonomous, Reconfigurable Disaster Communication System**", the Allen E. Paulson College of Engineering & Information Technology Faculty Research Seed Grants (CEIT-FRSG) program, Georgia Southern University, Statesboro GA, 30460. Award Amount: **\$10,000.00**. Award Period: Jan. 1, 2014 – Dec. 31, 2014. (Co-PI: Fernando Rios-Gutierrez)
- Rami J. Haddad (**Mentor**), Title: "**Ultra-Fast, Autonomous, Reconfigurable Disaster Communication System**", Allen E. Paulson College of Engineering & Information Technology Undergraduate Research (CEIT-UR) award, Georgia Southern University, Statesboro GA, 30460. Award Amount: **\$2,500.00**. Award Period: Nov. 1, 2013 – May 30, 2014. (PI: Aaron Ackerman, Co-PI: Juan Gray)
- Rami J. Haddad (**Mentor**), Title: "**Detection of Performance Degradations in Optical Fiber Networks**", Honors Undergraduate Research Fund, Georgia Southern University, Statesboro GA, 30460. Award Amount: **\$1,500.00**. Award Period: Sept 5, 2013 – May 30, 2014. (PI: Andrew Robertson)

UNDER REVIEW (Pending)

- Rami J. Haddad (**Co-PI**), Title: "**Examining STEM Classroom Learning from a Complex Systems Perspective**" US NSF, Award Amount: **\$470,041.96**. September, 10th, 2015. (PI: Jonathan Hilpert)
- Rami J. Haddad (**Senior Personnel**), Title: "**ENgaging Educators in Researching enerGY (ENERGY)**" US NSF, Award Amount: **\$499,000**. April 7th, 2015. (PI: Valentin Soloiu)
- Rami J. Haddad (**Co-PI**), Title: "**CDIS: C-Driven Interdisciplinary STEM**" US NSF, Award Amount: **\$461,379.65**. April 14th, 2015. (PI: Robert L. Mayes)

EXPERIENCE

- **Georgia Southern University** (August 2013-Present)
Assistant Professor (Tenure Track)
 - Directing the optical communication & smart grid research laboratory.
 - Directing the sustainability and renewable energy harvesting laboratory.
 - Teaching courses in communication systems, digital communication, optical communication, advance engineering analysis, computing for engineers, and intro. to computer engineering; between 4.8/5 and 5/5 average teaching evaluations each semester.
 - Students graduated:
 - **Bikiran Guha, MS (May 2015)**
 - **Paul Bupe, MS (May 2015)**
 - **Andrew Robertson, Honor (May 2015)**
- **Georgia Southern University** (August 2011- August 2013)
Visiting Assistant Professor
 - Teaching courses in signal processing, communication systems, advance engineering analysis, computing for engineers, digital systems, and intro. to computer engineering; between **4.8/5** and **5/5** average teaching evaluations each semester.
- **University of Akron** (August 2010- August 2011)
Senior Lecturer
 - Teaching courses in wireless communication, and computer architecture; 3.8/4 teaching evaluation 4.6/5 for Fall 2010, and 4.7/5 for Spring 2011.
 - Student co-advise with Michael McGarry:
 - **Rosish Shakya MS (May 2011)**

SERVICE

- **Organizing Committee Member** for:
 - Georgia Undergraduate Research Symposium 2015
 - GSU Research Symposium 2015
 - STEM Research Summit 2014
 - **Session Chair** for:
 - American Society of Electrical Engineers (ASEE) Annual Conference 2015
 - IEEE Integrated STEM Education Conference (ISEC) 2015
 - American Society of Electrical Engineers (ASEE) Annual Conference 2014
 - **Technical Program Committee (TPC) Member** for:
 - IEEE International Conference on Signal Processing & Data Mining (ICSPDM) 2014 through 2015.
 - 3rd International Conference on Advances in Computing, Communications and Informatics (ICACCI) 2013 through 2014.
 - IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems (SPICES) 2014 through 2015.
 - 12th IEEE India International Conference (INDICON 2015).
 - World Symposium on Mechatronics Engineering & Applied Physics (WSMEAP 2015).
 - Global Summit on Computer & Information Technology (GSCIT 2015).
 - International Conference on Green Computing and Internet of Things (ICGCIoT 2015).
 - IEEE International Conference on Solar Energy and Building (ICSoEB 2015).
 - International Conference on Engineering & Computational Innovation Sciences (ENCINS 2015).
 - IEEE International Conference on Computer Vision and Image Analysis applications (ICCVIA 2015).
 - 3rd International Conference on Consumer Electronics, Communications and Networks (CECNet 2013).
 - **Peer-reviewer** for various OSA, IEEE, IET, & Elsevier journals
 - **Founding Faculty Advisor for the Optical Society of America (OSA) Student Chapter (Eagle Optics)** at Georgia Southern University. (March, 2014 – Present)
 - **Faculty Advisor for the Gamma Phi Student Chapter of Theta Xi Fraternity** at Georgia Southern University. (March, 2014 – Present)
 - **STEM Content Fellow**, Interdisciplinary STEM Institute Advisory Committee. (February, 2015 – Present)
 - **IEEE Membership Development Chair** at the IEEE Savannah section. (August, 2013 – Present)
 - **Affiliate faculty member** in the **GSU i²STEM Institute**. (October, 2012 – Present)
 - **Founding Co-director**, for the CEIT Office of Undergraduate Research. (Aug., 2013 – Present)
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