HASSEL ALCALÁ

• PhD in Advanced Technologies •
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ABOUT ME

PhD focused on Wireless Sensor Networks, mathematical model using Markov chains, cybersecurity, electromagnetic energy harvesting systems, Cognitive Radio, Medium Access Control protocols and discrete-event simulations. Some of my qualities are adaptability, teamwork and fast learning skills, self-learning and problem solving ability, analysis capacity, ability to teach, honest and responsable. Passionate about performance evaluation of wireless networks, research, communication protocols and teaching.

EDUCATION

August 2017 - November 2021 • PhD in Advanced Technologies • National Polytechnic Institute • Thesis: *Energy Harvesting and Design of a Communication Protocol for a Wireless Sensor*

August 2015 - July 2017 • MSc in Computer Engineering • Graduated with honors • National Polytechnic Institute • Thesis: *Design of a Performance Evaluation Model for a Wireless Sensors Network with Cognitive Radio Capabilities*

August 2009 - March 2015 • BSc in Telematic Engineering • National Polytechnic Institute • Thesis: *Design and Study of the Performance of a Wireless Sensor Network with Cognitive Radio Capabilities for Structural Health Monitoring of Buildings in Case of Earthquakes*

RESEARCH PUBLICATIONS

2021 *Analysis and Design of a Wireless Sensor Network Based on the Residual Energy of the Nodes and the Harvested Energy from Mint Plants.* https://doi.org/10.1155/2021/6655967

2019 *Primary User Emulation in Cognitive Radio-Enabled WSNs for Structural Health Monitoring: Modeling and Attack Detection.* https://doi.org/10.1155/2019/6950534

2018 *Performance Analysis of a Wireless Sensor Network with Cognitive Radio Capabilities in Structural Health Monitoring Applications: A Discrete Model.* https://doi.org/10.1177/1550147718774001

Design and Simulation of Antennas for Energy Harvesting Systems in the WiFi Band. https://doi.org/10.1007/978-3-030-03763-5_5

2017 *Seism Report Analysis in a Wireless Sensor Network with Cognitive Radio Capabilities.* Ad Hoc & Sensor Wireless Networks Journal. Volume 39, No. 1-4.

2016 *Performance Analysis of a Wireless Sensor Network for Seism Reporting In an Overlay Cognitive Radio System.* https://doi.org/10.1109/WAINA.2016.43

PROFESSIONAL SKILLS

- Discrete-event simulations using C/C++.
- Experience on Medium Access Control (MAC) Protocols such as Non-Persistent Carrier-Sense Multiple Access (NP-CSMA) and Time Division Multiple Access (TDMA)
- Strong mathematical analysis using stochastic model as Markov Chain knowledge
- Familiarity with Antenna Theory and Design at 2.4GHz
- Experience with CST Studio Suite.
- Fundamental knowledge about MATLAB programming.