

AMJAD ABU-RMILEH, PhD

Curriculum Vitae

Postdoctoral researcher

ABC (Agricultural, Biological and Cognitive) robotics initiative
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EDUCATION

December 2013: PhD (Excellent *Cum laude* with International Doctorate Accreditation), University of Girona, Spain.
Doctoral Thesis Title: Control and Modeling Techniques in Biomedical Engineering: the Artificial Pancreas for Patients with Type 1 Diabetes.

November 2008: Master degree in Automatics, robotics and telematics, Department of Automation and Systems Engineering, University of Seville, Seville, Spain.
Master Thesis Title: Technologies in the Control of Patients with Diabetes Mellitus.

October 2006: B.Sc. degree in Biomedical Engineering, Department of Biomedical Engineering, Jordan University of Science and technology, Irbid, Jordan.

FIELDS OF INTEREST

- Brain-Computer interface
- Machine learning
- Control and modeling in biomedical systems
- Signal processing and System identification

PUBLICATIONS

Articles in Scientific Journals:

1. O. Alkoby, **A. Abu-Rmileh**, D. Todor, O. Shriki: Can we predict who will respond to neurofeedback? A review of the inefficacy problem and existing predictors for successful neurofeedback learning, *Neuroscience* (Under review)
2. A. Marconato, M. Schoukens, K. Tiels, D. Widanage, **A. Abu-Rmileh**, J. Schoukens: Comparison of several data-driven nonlinear system identification methods on a glucoregulatory system example, *IET Control Theory and Applications* 8 (17) (2014) 1921-1930

3. L. Vanbeylen, A. Van Mulders, **A. Abu-Rmileh**: Identification of a nonlinear model for a glucoregulatory benchmark problem, *Biomedical Signal Processing and Control* 13 (2014), 168-173
4. **A. Abu-Rmileh**, W. Garcia-Gabin: Wiener sliding-mode control for artificial pancreas; a new nonlinear approach to glucose regulation, *Computer Methods and Programs in Biomedicine* 107 (2) (2012) 327–340.
5. **A. Abu-Rmileh**, W. Garcia-Gabin, D. Zambrano: A robust sliding mode controller with internal-model for closed-loop artificial pancreas, *Medical and Biological Engineering and Computing* 48 (12) (2010) 1191-1201.
6. **A. Abu-Rmileh**, W. Garcia-Gabin: A Gain scheduling model predictive controller for blood glucose control in type 1 diabetes, *IEEE Transactions on Biomedical Engineering* 57 (10) (2010) 2478-2484
7. **A. Abu-Rmileh**, W. Garcia-Gabin: Feedforward-feedback multiple predictive controllers for glucose regulation in type 1 diabetes, *Computer Methods and Programs in Biomedicine* 99 (1) (2010) 113-123.
8. **A. Abu-Rmileh**, W. Garcia-Gabin, D. Zambrano: Internal model sliding mode control approach for glucose regulation in type 1 diabetes, *Biomedical Signal Processing and Control* 5 (2) (2010) 94–102.

Participation in International Conferences

1. **A. Abu-Rmileh**, J. Schoukens: Frequency Domain Analysis of Nonlinear Glucose Simulation Models, *8th IFAC Symposium on Biological and Medical Systems*. Budapest, Hungary. August 29–31 (2012). DOI: 10.3182/20120829-3-HU-2029.00041.
2. A. Marconato, M. Schoukens, K. Tiels, **A. Abu-Rmileh**, J. Schoukens: Nonlinear block-oriented identification for insulin-glucose models, *31th Benelux Meeting on Systems and Control*. Heijden, Netherlands. March 27-29 (2012).
3. **A. Abu-Rmileh**, W. Garcia-Gabin: Smith Predictor Sliding Mode Closed-loop Glucose Controller in Type 1 Diabetes, *18th International Federation of Automatic Control World Congress (IFAC-WC)*. Milan, Italy. August 28–September 2 (2011). DOI: 10.3182/20110828-6-IT-1002.01213.

Book Chapters:

1. **A. Abu-Rmileh**, W. Garcia-Gabin: Detection and Prevention of Hypoglycemia in Automated Insulin Delivery Systems for Type 1 Diabetes Patients, *Advances in Medicine and Biology* 44, Leon V. Berhardt (Editor), Nova Science Publishers (2012).
2. **A. Abu-Rmileh**, W. Garcia-Gabin: Hypoglycemia prevention in closed-loop artificial pancreas for patients with type 1 diabetes, *Diabetes – Damages and treatments*, Everlon Rigobelo (Editor), InTech (2011).

Posters:

1. **A. Abu-Rmileh**, E. Zakkay, L. Shmuelof, O. Shriki: Co-adaptive Learning in Brain-Computer Interfaces, BrainTech 2015, Tel-Aviv, Israel (2015)
2. N. Artzi, E. Zakkay, S. Matar, A. Shkedy-Rabani, **A. Abu-Rmileh**, O. Shriki: Exploring Different Brain-Computer Interface Paradigms, BrainTech 2015, Tel-Aviv, Israel (2015)

Talks:

EEG-based brain computer interfaces; Co-adaptive learning in Motor-Imagery based BCI, NeuroBridges meeting, Paris, France. (September 2015)

RESEARCH EXPERIENCE

May 2014 – Present: *Postdoctoral fellow* (ABC robotics initiative), department of Brain and Cognitive Sciences, Ben-Gurion University of the Negev, Israel. *Brain-Computer interface*. Host: Dr. Oren Shriki (*Computational psychiatry Lab*), Dr. Lior Shmuelof (*Brain and Action Lab*)

May 2013 – December 2013: *Researcher and PhD candidate*, GRECS research group, University of Girona, Spain. *Modeling and Control in Biomedical Engineering: the Artificial Pancreas for Patients with Type 1 Diabetes*.

May 2011 – April 2013: *Research Personnel in Training*, GRECS research group, University of Girona, Spain. *Modeling and Control in Biomedical Engineering: the Artificial Pancreas for Patients with Type 1 Diabetes*.

October 2010 – April 2011: *Research fellow*, GRECS research group, University of Girona, Spain. *Advanced control techniques for blood glucose regulation in type 1 diabetes*.

May 2009 – September 2010: *Research fellow*, Model Interval and Control Engineering (MICE) research group, University of Girona, Spain. *Advanced control techniques for blood glucose regulation in type 1 diabetes*.

TRAINING & WORKSHOPS

8 February 2016 – 12 February 2016: 2nd International Winter School on Big Data Analysis, BigDat 2016, Bilbao, Spain.

9 May – 3 June 2011: Doctoral School on Identification of Nonlinear Dynamic Systems. "An intensive training on advanced modeling and simulation techniques of (non)linear dynamic systems, starting from experimental data, ELEC department, Vrije Universiteit Brussel (VUB), Brussels, Belgium.

SCIENTIFIC RESEARCH STAYS

1 May 2012 – 30 June 2012: "Control-relevant nonlinear modeling techniques for the design of closed-loop control algorithms for glucose regulation system in type 1 diabetes". Promoter: Prof. Dr. Ir. Johan Schoukens, ELEC department, Vrije Universiteit Brussel (VUB), Brussels, Belgium.

17 October 2011 – 31 March 2012: "System identification and frequency domain measurements techniques for the development of artificial pancreas." Promoter: Prof. Dr. Ir. Johan Schoukens, ELEC department, Vrije Universiteit Brussel (VUB), Brussels, Belgium.

9 May – 3 June 2011: Doctoral School on Identification of Nonlinear Dynamic Systems. "An intensive training on advanced modeling and simulation techniques of (non)linear dynamic systems, starting from experimental data", Promoter: Prof. Dr. Ir. Johan Schoukens, ELEC department, Vrije Universiteit Brussel (VUB), Brussels, Belgium.

WORK EXPERIENCE

December 2006 – July 2007: Medical supplies and Services Co. (MSS), Ramallah, the West bank, *Biomedical Service Engineer:*

- Field technical Representative in East Jerusalem
- Product knowledge and customer service

June 2006 – September 2006: Al-Makassed Hospital, Department of biomedical Engineering. East Jerusalem, Israel, *Biomedical Engineering trainee:*

- Training course in biomedical engineering as a graduation requirement.
- Theoretical background on Medical and Laboratory equipments.
- Installation and maintenance of hospital equipments.

LANGUAGES

- Arabic, native proficiency
- English, full professional proficiency
- Spanish, full professional proficiency
- Hebrew, limited working proficiency

INVITED REVIEWER

- Journal of Medical and Biological Engineering and Computing
- Journal of Computer Methods and Programs in Biomedicine
- Journal of Artificial Intelligence in Medicine