Miguel P. Xochicale

Curriculum Vitae – December 2017

Contact

📞 +44 (0) 121 414 314 1 (UK)

✉ perez.xochicale@gmail.com

🏠 http://mxochicale.github.io

🐦 @_mxochicale

🐙 mxochicale

ORCID: 0000-0002-8225-7517

Research Interests

I am interested in the fields of Human-Robot Interaction and Human Activity Recognition. For my PhD, I am gaining deeper understanding of the variability of human movements and facial expressions using Nonlinear Dynamics and Deep Learning.

Education

11/2014 – Present	**Ph.D. in Human-Robot Interaction**, *University of Birmingham*, UK. Thesis: Automatic Classification of Movement Variability in the context of Human-Robot Interaction 🐙 Advisors: Professor Chris Baber and Professor Martin Russell
09/2004 – 09/2006	**M.Sc. in Electronics**, *Instituto Nacional de Astrofísica, Óptica y Electrónica*, México. Thesis: Digital Filter FIR with less multipliers 📄 🐙 Advisor: Gordana Jovanovic Dolecek
08/1999 – 09/2004	**B.Eng. in Electronics**, *Instituto Tecnológico de Puebla*, México. Thesis: Speed control in LabVIEW for a two-degrees-of-freedom Robot. 📄 🐙 Advisor: M.Sc. José Esteban Torres León.

Publications

M. P. Xochicale and C. Baber. *Towards the Analysis of Movement Variability in Human-Humanoid Imitation Activities.* Bielefeld, Germany, October 2017. The 5th International Conference on Human Agent Interaction (HAI2017) 📄 🖼 🐙.

M. P. Xochicale, C. Baber, and M. Oussalah. *Towards the Quantification of Human-Robot Imitation Using Wearable Inertial Sensors.* Vienna, Austria, March 2017. The 12th Annual Conference on Human-Robot Interaction (HRI2017) 📄 🖼 🐙.

M. Xochicale, C. Baber, M. Oussalah, and Smith. *Analysis of the Movement Variability in Dance Activities using Wearable Sensors.* La Granja, Segovia, Spain, October 2016. The 2nd International Symposium on Wearable Robotics (WeRob16) 📄 🖼 🐙.

M. Xochicale, C. Baber, and M. Oussalah. *Understanding Movement Variability of Simplistic Gestures Using an Inertial Sensor.* Oulu, Finland, June 2016. The 5th ACM International Symposium on Pervasive Displays 📄 🖼 🐙.

Miguel A. Perez-Xochicale and G. Jovanovic-Dolecek. *A New Method for Design Narrow Band Lowpass FIR Filters Using a Scale Function.* Veracruz, Mexico, November 2006. The 2nd International Conference on Electronic Design, Proc. edited by Victor Champac at all, ISBN 968-9085-01-8, pp.85-89 📄 🐙.

Miguel A. Perez-Xochicale and G. Jovanovic-Dolecek. *A New Method for Design Narrow Band Lowpass FIR Filters Using a Scale Function.* Chihuahua, Mexico, August 2006. The 28th International Congress of Electronic Engineering, Proc edited by ITCH Chiuahua, 2006, pp.165-168 📄 🐙.

G. Jovanovic-Dolecek and **Miguel A. Perez-Xochicale**. *One Method for Design of Wideband FIR Filters Without Multipliers.* Puebla, Mexico, February 2006. The 16th IEEE Conference on Electronics, Communications and Computers, CONIELECOMP 2006, published by IEEE Computer Society, N0. 0-7695-2505-9/06. 2006 IEEE 📄 🐙.

Teaching Experience

08/2017– 12/2017	**Teaching Associate**, *University of Birmingham*, UK. Engineering Maths 2. Lecturer: Professor Martin Russell
08/2017– 12/2017	**Teaching Associate**, *University of Birmingham*, UK. Computing for Engineering. Lecturer: Dr Sridhar Pammu
01/2017– 06/2017	**Teaching Associate**, *University of Birmingham*, UK. Matlab Laboratories. Lecturer: Dr Edward Tarte
08/2016– 12/2016	**Teaching Associate**, *University of Birmingham*, UK. Computing for Engineering. Lecturer: Dr Sridhar Pammu

10/2014– 12/2014	**Teaching Associate**, *University of Birmingham*, UK. Small Embedded Systems. Lecturer: Professor Chris Baber
08/2013– 12/2013	**Teacher**, *Bilingual Hight School at TECMilenio University*, Puebla,México. Courses: Information Technology ☑, Euclidian Geometry ☑ and Microsoft Office Access ☑
Spring 2012 – Autumn 2012	**Invited Lecturer in Mechatronic Engineering**, *Universidad Madero*, Puebla, México. Courses: Fundamentals of Automation ☑, Industrial Electronics ☑, Research Projects ☑, Metrology ☑, Physics ☑, Computer Integrating Manufacturing, and Power Electronics
Spring 2007 – Spring 2012	**Invited Lecturer in Electronic Engineering**, *Universidad Iberoamericana Puebla*, México. Courses: Stochastic Processes Course ☑, Digital Signal Processing ☑ and Analog Filters.
08/2006 – 06/2007	**Invited Lecturer in Mechatronic Engineering**, *Instituto Tecnológico Superior de Atlixco*, México. Courses: Electronics I, Numerical Methods, and Electricity and Magnetism. (January-June 2007.) Electricity and Magnetism, and Electricity and Industrial Electronics (August-December 2006)

Professional Experience

02/2013 – 08/2013	**Research Assistant**, *INAOE's Robotics Laboratory*, México. Detailed achievements: I develop a Human-Robot Interaction Demo Dance which was based on a ZSTAR3 Radio Frequency single three-axis accelerometer and a Patrolbot mobile robot. For the demo, I explored four gestures wearing the accelerometer in the left wrist in order to create simple dance activities with the Patrolbot mobile robot. For further information go to ☑.
01/2012 – 01/2013	**Invited Lecturer**, *Universidad Madero*, Puebla, México. Detailed achievements: I proposed and supervised the following students' projects: Haptic Referee Glove, Lightmetre and Pychometre using Arduino, Smart Irrigation, Persistent Of Vision Bicycle Wheel and a Delta Robot Structure. ☑ Additionally, I proposed and designed a Mechatronic Laboratory which includes a benchmark for Mechatronic's laboratories in México and Puebla, a 3D layout design and minimal requirements of hardware and software for the laboratory. For further information go to ☑.
09/2003 – 03/2004	**Research Internship**, *INAOE*, México. Detailed achievements: I implemented a speed control for a two-degree-of-freedom Robot with Microcontrollers PIC 16F84 and 16F877 that made communication via RS-232 using Virtual Instruments on LabVIEW.

Awards and Honours

11/01/2017	I was selected to present advances of my Ph.D in the second forum of Mexican Talent Innovation Match MX with my talk "Towards the improvement of Healthy Ageing with Humanoid Robos". ☑. 🖺
16-18/06/2016	I won a shared first prize for presenting one of the two best posters at the XIV Symposium of Mexican Students in the UK at University of Edinburgh. ☑.
20-24/07/2015	My project of a low-cost robot was selected amoung 125 applications received from 35 countries and presented at the first international public entrepreneurship program in Mexico (MECATE 2015) ☑ ▶.
11/2014-11/2018	Full Ph.D. Scholarship in the UK from the Mexican National Council on Science and Technology (CONACyT).
25-27/05/2013	Markovito, a service robot, won the first place at the Mexican Tournament of Robotics 2013 in the cathegory at HOME where I presented a Human-Robot Interation Dance Demo ▶.
09/2004-09/2006	Full M.Sc. Scholarship in México from the CONACyT.

Languages

English	IETLS Band Score 6.0: Listening 6.0, Reading 7.0, Writing 6.0, Speaking 5.5.	*11/01/14*
Spanish	Native tongue	

Technical Skills

General	Deep Learning (e.g., TensorFlow); Inertial Measurament Units(data collection and analysis); Graphic design (Inkscape)
Programming	R, python, Robot Operating System (ROS), C, C++, Arduino, Processing, LATEX, the shell, GNU-emacs, GNU-Octave, MATLAB and LabVIEW.

Scientific Engagement

2017–2018	**Webmaster and contributor of Machine Learning for Mexico**, GitHub: 🐙 , Website: ☑.
2017–2018	**Seminar of Science Coordinator of the Mexican Society at University of Birmingham, UK**, GitHub: 🐙, Website: ☑.
2014-2018	**Outreach Activities to teach children how to build low cost robots**, at University of Birmingham, UK.
2013–2018	**Founder of LibrE Robotics**, *a non-profit organization, to transfer knowledge of Educative Robotics for children to build conditions for a better world*, Website: ☑.