

# Ing. Moises Diaz-Cabrera (PhD. Student)

Updated

Nationality

Identity Document

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August 2015

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Date of Birth

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## Work experience

- **University of Fribourg, Switzerland**
  - *May 2015 - August 2015*  
Visiting Research Scholar in University of Fribourg, Switzerland. Main lines: Signature normalization, pattern recognition
- **IdeTIC (I+D+i Center) - ULPGC**
  - *September 2012 - Present*  
Research Engineer at the IdeTIC - ULPGC. Main lines of research: Biometric systems based on signature and handwriting, pattern recognition.
- **Universidad de Las Palmas de Gran Canaria, Spain**
  - *February 2015 - May 2015*  
Lecturer in the course: Digital Signal Processing from B.S. Telecommunications Engineering Technology.
- **Indian Statistical Institute, Kolkata, Indian**
  - *July 2015 - July 2015*  
Visiting Research Scholar in Indian Statistical Institute, Kolkata, Indian. Main lines: Multiscript Signature and Handwriting Recognition.
- **Polytechnique Montréal, Canada**
  - *September 2014 - Present*  
Visiting Research Scholar in Polytechnique Montréal, Canada. Main lines: Kinematic theory of rapid human movements with the delta-lognormal function
- **University of Bari, Italy**
  - *April 2014 - June 2014*  
Visiting Research Scholar in University of Bari, Italy. Main lines: Stability in off-line and On-line handwritten signatures
- **Polytechnic High School**
  - *March 2013 - May 2013*  
Trainee teacher of Computer Science and Electrical Engineering associated to Technology Department.
- **CICEI (I+D+i Center) - ULPGC**
  - *September 2008 - September 2012*  
Research Engineer and PhD fellowship at the Center for Innovation and Information Society (CICEI - ULPGC). Main lines of research: Mobile Robotics, Intelligent Transportation Systems and Artificial Intelligence.
- **University of Parma, Italy**
  - *January 2012 - July 2012*  
Visiting Research Scholar in VisLab. Main lines: Traffic light recognition, computer vision.
- **University of Parma, Italy**
  - *March 6th, 2012*  
Seminar in "Scientific Communication using Beamer - L<sup>A</sup>T<sub>E</sub>X" to VisLab staffs.
- **University of Las Palmas de Gran Canaria (ULPGC)**
  - *December 2011*  
Lecturer in an university extension course "Introduction to Using the L<sup>A</sup>T<sub>E</sub>X as a Tool for Production Scientific, Technical and Professional Texts". 30 hours.
- **University of Las Palmas de Gran Canaria (ULPGC)**
  - *November 2010 - May 2011*  
Research Engineer in the Division of Evolutionary Computation and Applications - University Institute SIANI, (ULPGC). Main line: Photogrammetric analysis of images, computer vision.
- **EF Education First, Hastings and Oxford, England**
  - *August 2008 and September 2010*  
Summer Internship: Marking placement level test. Allocating students to classes. Helping students with timetable/class queries. Basic supporting and computer task in the admin department. Answering question at the school reception and taking groups of students in local excursions.
- **AVEC (Association of Catholic Education in Venezuela)**
  - *April 2010*  
Lecturer in a course about Environmental Impact Assessment in Industrial Projects. 10 hours.
- **University of Las Palmas de Gran Canaria (ULPGC)**
  - *November 2008 - May 2009*  
Collaborator scholarship in Computer Sciences department (ULPGC).
- **El Corte Inglés, department store.**
  - *July - August 2006*  
Assistant in a supermarket.

## Education

### University of Las Palmas de Gran Canaria (ULPGC), Spain

Doctoral Thesis (Ph.D.), *In process*

September 2012 - June 2013

Master's degree in Secondary Education

October 2011 - July 2012

Doctorate course in Cybernetics and Telecommunications.

September 2010 - November 2011

Master's degree in Intelligent Systems and Numerical Applications in Engineering.

September 2004 - November 2010

M. Tech - Industrial Engineering. Average Score: 8.579/10.0

September 2007 - November 2010

M. Tech - Industrial Electronics and Automation Engineering. Average Score: 8.964/10.0

## Languages

- **Inglés B2.** Advance written and spoken level in English.
- **Italiano B1.** Intermediate written and spoken level in Italian.

## Participation in Research Projects

- *SCRIBA: Quality Assessment of Handwriting for Use Multidisciplinary.* HERGAR Foundation For Research And Education Promotion, Spain. April 1st, 2014 - June 30th, 2015. Main researcher: Dr. Aythami Morales and Moises Diaz-Cabrera.
- *Synthesis of biometric samples for health and safety applications.* Ministry of Economy and Competitiveness, Spain. July, 2013 - July, 2015. Main researcher: Dr. Miguel A. Ferrer. TEC2012-38630-C04-02.
- *Low Cost Platform for Simulation Scale Electric Vehicle Smart Solutions and Intelligent Transportation Systems.* Pre-competitive research projects. ULPGC, Spain. February 2010 – December 2010. Main researcher: Dr. Javier J. Sánchez Medina.

## Awards

- Talent and commitment Awards. Cajasieta, Spanish Bank. June 2015.
- Best Student Paper Award at IEEE 14th International Conference on Frontiers in Handwriting Recognition 2014
- Grant for the International Summer Schools on Biometrics 2014 by the COST (European Cooperation in Science and Technology)
- Best Voted Poster at BMVA Computer Vision Summer School 2013
- Awarded for the excellent academic results. From Gran Canaria local government, Spain. 2008/2009
- Awarded for the excellent academic results. From Gran Canaria local government, Spain. 2005/2006

## Publications



### JCR Journals

#### 2015

Moises Diaz-Cabrera, Miguel A. Ferrer, and Aythami Morales. Modeling the lexical morphology of western handwritten signatures. *PLoS ONE*, 10(4):e0123254, 04 2015.

G. Pirlo, V. Cuccovillo, M. Diaz-Cabrera, D. Impedovo, and P. Mignone. Multidomain verification of dynamic signatures using local stability analysis. *IEEE Transactions on Human-Machine Systems*, PP(99):1-6, 2015.

Javier Galbally, Moises Diaz-Cabrera, Miguel A. Ferrer, Marta Gomez-Barrero, Aythami Morales, and Julian Fierrez. On-line signature recognition through the combination of real dynamic data and synthetically generated static data. *Pattern Recognition*, 48(9):2921 – 2934, 2015.

Moises Diaz-Cabrera, Pietro Cerri, and Paolo Medici. Robust real-time traffic light detection and distance estimation using a single camera. *Expert Systems with Applications*, 42(8):3911 – 3923, 2015.

M.A. Ferrer, M. Diaz-Cabrera, and A. Morales. Static signature synthesis: A neuromotor inspired approach for biometrics. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 37(3):667-680, March 2015.

## ■ Book Chapters

### 2015

Cristina Carmona-Duarte, Jesus B. Alonso, Moises Diaz, Miguel Ferrer, Pedro Gomez-Vilda, and Rejean Plamondon. Kinematic modelling of diphthong articulation. In *Smart Innovation Systems and Technologies, Springer*, 2015.

### 2014

Moises Diaz-Cabrera, Aythami Morales, and Miguel A. Ferrer. Emerging issues for static handwritten signature biometric. In *Emerging Aspects in Handwritten Signature Processing, G. Pirlo et al (Eds.), Word Scientific.*, pages 111–122, 2014.

### 2013

Moises Diaz-Cabrera and Pietro Cerri. Traffic light recognition during the night based on fuzzy logic clustering. In Roberto Moreno-Díaz, Franz Pichler, and Alexis Quesada-Arencibia, editors, *Computer Aided Systems Theory - EUROCAST 2013*, volume 8112 of *LNCS*, pages 93–100. Springer Berlin Heidelberg, 2013.

Moises Díaz-Cabrera, Jorge Cabrera-Gómez, Ricardo Aguasca-Colomo, and Kanstantsin Miatliuk. Photogrammetric analysis of images acquired by an uav. In Roberto Moreno-Díaz, Franz Pichler, and Alexis Quesada-Arencibia, editors, *Computer Aided Systems Theory - EUROCAST 2013*, volume 8112 of *LNCS*, pages 109–116. Springer Berlin Heidelberg, 2013.

Kanstantsin Miatliuk and Moises Díaz-Cabrera. Application of hierarchical systems technology in design and testing of circuit boards. In Roberto Moreno-Díaz, Franz Pichler, and Alexis Quesada-Arencibia, editors, *Computer Aided Systems Theory - EUROCAST 2013*, volume 8112 of *LNCS*, pages 521–526. Springer Berlin Heidelberg, 2013.

### 2012

Javier J. Sánchez Medina, Moisés Díaz Cabrera, Manuel J. Galán Moreno, and Enrique Rubio Royo. Electric scaled vehicle as its experimentation platform. In Roberto Moreno-Díaz, Franz Pichler, and Alexis Quesada-Arencibia, editors, *EUROCAST (2)*, volume 6928 of *LNCS*, pages 441–448. Springer, 2011.

Javier J. Sánchez Medina, Moisés Díaz Cabrera, Manuel J. Galán Moreno, and Enrique Rubio Royo. User equilibrium study of aetros travel route optimization system. In Roberto Moreno-Díaz, Franz Pichler, and Alexis Quesada-Arencibia, editors, *EUROCAST (2)*, volume 6928 of *LNCS*, pages 465–472. Springer, 2011.

Moisés Díaz Cabrera, Javier J. Sánchez Medina, Idaira Perez-Armas, Elisa Medina-Machin, Manuel J. Galán Moreno, and Enrique Rubio Royo. Driver pattern study of las palmas de gran canaria. In Roberto Moreno-Díaz, Franz Pichler, and Alexis Quesada-Arencibia, editors, *EUROCAST (2)*, volume 6928 of *LNCS*, pages 473–480. Springer, 2011.

### 2009

Javier J. Sánchez Medina, Manuel J. Galán Moreno, Moisés Díaz Cabrera, and Enrique Rubio Royo. Traffic signals in traffic circles: Simulation and optimization based efficiency study. In Roberto Moreno-Díaz, Franz Pichler, and Alexis Quesada-Arencibia, editors, *EUROCAST*, volume 5717 of *LNCS*, pages 453–460. Springer, 2009.

## ■ Conferences

### 2015

Giuseppe Pirlo, Moises Diaz, Miguel A. Ferrer, Donato Impedovo, Fabrizio Occhionero, and Urbano Zurlo. Early diagnosis of neurodegenerative diseases by handwritten signature analysis. In *1st Int. Workshop on Image-based Smart City Applications (ISCA): A Workshop of International Conference Conference on Image Analysis and Processing (ICIAP)*, pages 1–8, 2015.

Moises Diaz, Pietro Cerri, Giuseppe Pirlo, Miguel A. Ferrer, and Donato Impedovo. A survey on traffic light detection. In *1st Int. Workshop on Image-based Smart City Applications (ISCA): A Workshop of International Conference Conference on Image Analysis and Processing (ICIAP)*, pages 1–8, 2015.

Moises Diaz, Andreas Fischer, Rejean Plamondon, and Miguel A. Ferrer. Towards an automatic on-line signature verifier using only one reference per signer. In *13th International Conference on Document Analysis and Recognition (ICDAR 2015)*, pages 1–5, 2015.

Andreas Fischer, Moises Diaz, Rejean Plamondon, and Miguel A. Ferrer. Robust score normalization for dtw-based on-line signature verification. In *13th International Conference on Document Analysis and Recognition (ICDAR 2015)*, pages 1–5, 2015.

Moises Diaz, Patricia Henriquez, Miguel Ferrer, Giuseppe Pirlo, Jesus B. Alonso, and Donato Impedovo. Novel method for early bearing fault detection based on dynamic stability measure. In *49th IEEE International Carnahan Conference on Security Technology*, pages 1–5, 2015.

Moises Diaz, Miguel A. Ferrer, Giuseppe Pirlo, Giuliano Giannico, and Donato Impedovo. Off-line signature stability by optical flow: Feasibility study of predicting the verifier performance. In *49th IEEE International Carnahan Conference on Security Technology*, pages 1–5, 2015.

Aythami Morales, Moises Diaz, Gloria Llinas-Sanchez, and Miguel A. Ferrer. Earprint recognition based on an ensemble of global and local features. In *49th IEEE International Carnahan Conference on Security Technology*, pages 1–5, 2015.

Kanstantsin Miatliuk and Moises Diaz-Cabrera. Geometrical representation of written text elements using hierarchical systems technology. In *15th International Conference on EUROCAST*, pages 1–2, 2015.

### 2014

Moises Diaz-Cabrera, Cristina Carmona-Duarte, Aythami Morales, and Miguel A. Ferrer. Aspectos emergentes en la docencia de procesado de la señal en ingeniería. In *I Jornadas Iberoamericanas de Innovación Educativa en el ámbito de las TIC, Las Palmas de Gran Canaria*, pages 23–30, 2014.

Aythami Morales, Miguel A. Ferrer, Moises Diaz-Cabrera, Cristina Carmona, and Gordon Thomas. Handwritten document ink identification by hyperspectral analysis. In *48th IEEE International Carnahan Conference on Security Technology*, pages 1–5, 2014.

Moises Diaz-Cabrera, Marta Gomez-Barrero, Aythami Morales, and Miguel A. Ferrer. Generation of enhanced synthetic off-line signatures based on real on-line data. In *14th International Conference on Frontiers in Handwriting Recognition (ICFHR2014)*, pages 482–487, 2014.

Moises Diaz-Cabrera, Miguel A. Ferrer, and Aythami Morales. Cognitive inspired model to generate duplicated static signature images. Best Student Paper Award. In *14th International Conference on Frontiers in Handwriting Recognition (ICFHR2014)*, pages 482–487, 2014.

## 2013

- Miguel A. Ferrer, Moises Diaz-Cabrera, Aythami Morales, Javier Galbally, and Marta Gomez-Barrero. Realistic synthetic off-line signature generation based on synthetic on-line data. In *47th IEEE International Carnahan Conference on Security Technology (ICCST)*, pages 116–121, 8–11 October 2013.
- Aythami Morales, Miguel A. Ferrer, Moisés Diaz-Cabrera, and Esther González. Analysis of local descriptors features and its robustness applied to ear recognition. In *47th IEEE International Carnahan Conference on Security Technology (ICCST)*, pages 171–175, 8–11 October 2013.
- Miguel A. Ferrer, Moises Diaz-Cabrera, and Aythami Morales. Synthetic off-line signature image generation. In *6th IAPR International Conference on Biometrics*, pages 1–7, 4–7 June 2013.
- Moises Diaz-Cabrera and Pietro Cerri. Traffic light recognition during night based on fuzzy logic clustering. In *workshop on Computer Vision, Sensing and Image Processing. International Conference EUROCAST*, 2013.
- Moises Diaz-Cabrera, Jorge Cabrera-Gamez, and Ricardo Aguasca-Colomo. Photogrammetric analysis of images acquired by an uav. In *workshop on Computer Vision, Sensing and Image Processing. International Conference EUROCAST*, 2013.

## 2012

- Moises Diaz-Cabrera, Pietro Cerri, and Javier J. Sanchez-Medina. Suspended traffic lights detection and distance estimation using color features. In *The 15th International IEEE Conference on Intelligent Transportation Systems (IEEE ITSC 2012)*, Anchorage, Alaska, USA, 16 Sep - 19 Sep 2012.
- Javier J. Sanchez-Medina, Elisa Medina-Machin, Moises Diaz-Cabrera, Manuel Galan-Moreno, and Enrique Rubio-Royo. Overtaking and giving way: Design and validation of a lightweight extended cellular automata urban traffic simulator. In *The 15th International IEEE Conference on Intelligent Transportation Systems (IEEE ITSC 2012)*, Anchorage, Alaska, USA, 16 Sep - 19 Sep 2012.
- Moisés Díaz-Cabrera. Piattaforma low cost per la simulazione scale electric vehicle intelligente. In *Workshop in Veicoli Intelligenti e Loro Applicazioni in Ambito Logistico*. RFID and VisLab, Bologna, Italia, Aprile 2012.
- Moises Diaz-Cabrera, Javier Lorenzo, and Modesto Castrillón. A performance based study on gender recognition in large datasets. In *VI Jornadas de Reconocimiento Biométrico de Personas. (JRBP12)*, January, 2012.

## 2011

- Javier J. Sanchez-Medina, Moises Diaz-Cabrera, Manuel J. Galan-Moreno, and Enrique Rubio-Royo. Electric scaled vehicle as its experimentation platform. In *workshop Mobile and Autonomous Transportation Systems del Congreso Internacional EUROCAST*, 2011.
- Javier J. Sanchez-Medina, Moises Diaz-Cabrera, Manuel J. Galan-Moreno, Enrique Rubio-Royo, and Ronghui Liu. User equilibrium study of aetros travel route optimization system. In *workshop Traffic Behaviour, Modelling and Optimization del Congreso Internacional EUROCAST*, 2011.
- Moises Diaz-Cabrera, Javier J. Sanchez-Medina, Idaira Perez-Armas, Elisa Medina-Machin, Manuel J. Galan-Moreno, and Enrique Rubio-Royo. Driver pattern study of las palmas de gran canaria. In *workshop Traffic Behaviour, Modelling and Optimization del Congreso Internacional EUROCAST*, 2011.

## 2010

- Javier J. Sanchez-Medina, Moises Diaz-Cabrera, Manuel J. Galan-Moreno, Enrique Rubio-Royo, and Ronghui Liu. Aetros: Adaptive evolutionary travel route optimization system. In *1st Workshop on Traffic Behavior, Modelling and Optimization, The 13th International IEEE Conference on Intelligent Transportation Systems*, Madeira, Portugal, Sep. 2010.
- Manuel J. Galan-Moreno, Javier J. Sanchez-Medina, Moises Diaz-Cabrera, Idaira Perez-Armas, Elisa Medina-Machin, and Enrique Rubio-Royo. Driver pattern clustering: Traffic behavior study of las palmas de gran canaria. In *1st Workshop on Traffic Behavior, Modelling and Optimization, The 13th International IEEE Conference on Intelligent Transportation Systems*, Madeira, Portugal, Sep. 2010.

## 2009

- Javier J. Sánchez Medina, Manuel J. Galán Moreno, Moisés Díaz Cabrera, and Enrique Rubio Royo. Traffic signals in traffic circles: Simulation and optimization based efficiency study. In *EUROCAST*, 2009.

## Reviews

1 revision in Journal PRL (2015), 2 revisions in ICDAR Conference IEEE (2015), 1 revision in Journal CVIU (2015), 6 revisions in Journal THMS IEEE (2014-2015), 2 revisions in Journal PLoS ONE (2014), 3 revision in IV Conference IEEE (2013-2014), 2 revision in ITS Conference IEEE (2013), 5 revisions in Journal T-ITS IEEE (2013-2015), 1 revision in Journal ITS-M IEEE (2013), 5 revisions in Journal T-VT IEEE (2012 - 2013), 1 revision in Journal JCECT (2010).

## Skills

**Programming Languages:** C/C++, OpenCV, L<sup>A</sup>T<sub>E</sub>X, SQL y Postgres (database) and assembler.

**Operative Systems:** Administration in UNIX systems: Linux (Fedora y Ubuntu). Windows 95/98/NT/2000/XP/7.

**Applications:** Mathematica, MatLab, GNU Octave, LabVIEW, L<sup>A</sup>T<sub>E</sub>X, OpenOffice, Labview, Dialux, Calculux, MS Office XP, AutoCAD, Adobe Premier Pro. (Ability to learn computer softwares.)

**Laboratory skills:** Digital/Analogue assessment, Function generator, Tester.

**Social skills and competences:** Motivated to learn new skills, prepared for the hardware and developed software applications (HW / SW). Decision making, negotiation, public speaking. Skill in planning and management of time and resources. Ability of teamwork and cooperation, both among peers and in leadership roles. Conflict resolution, proactive. Worker, demanding, responsible, persistent search for excellence. Consciousness of continuous learning, adaptability and flexibility at work, commitment to the organization.

**Driver License:** Yes