ERWIN JOSE LOPEZ PULGARIN

Research Associate ⋄ The University of Manchester, UK

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EDUCATION

PhD in Mechanical Engineering *August 2015 - August 2019*
University of Bristol, Bristol (UK)
4 years programme (full time) funded by COLCIENCIAS (Colombia) and Newton-Caldas Fund
(UK)

Thesis Title	Estimation and prediction of human behaviour using multi-modal physiological measurements and data-driven methods in human robot/vehicle interaction
Supervisors	Guido Herrmann and Ute Leonards

B.Sc Mechatronics Engineer *August 2007 - August 2012*
Universidad Nacional de Colombia (top-rated in Colombia), Bogotá (Colombia)   gpa: 4.1/5.0
5 years programme (full time)

Thesis Title	Approaches for Autonomy in Mobile Robotics Tasks
Supervisors	Jorge Sofrony

WORK EXPERIENCE

Research Associate, *January 2020–current*, University of Manchester, Manchester, UK

Technical Assistant for Outreach Events, *June 2017-July 2017*, University of Bristol, Bristol, UK

Teaching Support Assistant, *August 2015–April 2018*, University of Bristol, Bristol, UK

CTO & Co Founder, *January 2013–July 2020*, TEE SAS, Bogotá, Colombia

Young Blood Researcher, *January 2014–January 2015*, Universidad Nacional de Colombia, Bogotá, Colombia

Research Assistant, *Aug. 2013–Jan. 2014, Jan. 2013–Aug. 2013 & Jan. 2012–Jan. 2013*, Universidad Nacional de Colombia, Bogotá, Colombia

AWARDS

Researcher Co-investigator, *2018*, EPSRC funded APC Spoke Feasibility Project on Grant: *Human-Car Interaction Data Analysis - Predicting the Driver*.

Best Poster Prize, *2017*, TAROS 2017, 18th Towards Autonomous Robotic Systems (TAROS) Conference.

PhD Scholarship holder, *2014*, COLCIENCIAS (one of 236 awarded candidates) and British Council's Newton-Caldas Fund (one of 51 awarded candidates).

Young blood researcher 2012 fund holder, *2012*, COLCIENCIAS (Colombia) fund, one of 1107 awarded projects from an initial 2121 candidates.

OTHER WORK EXPERIENCE

RAIN webinars in HRI, *May 2020*, Invited speaker, Manchester, UK, *Estimation and prediction of human behaviour using multi-modal physiological measurements and data-driven methods in human robot interaction*.

Control group seminar at RACE, *June 2019*, Invited speaker, Culham, UK, Guido Herrmann, Erwin Lopez, *Recent advances for prediction of human actions in HRI; its use for automotive systems and teleoperation*.

Visiting Researcher Talk, *January 2019*, Invited speaker, Mexico DF, Mexico, *An Augmented Cognition approach in prediction of human behaviour for control in HRI.*

UKCRIC Future Research Leaders' Workshop, *November 2018*, Poster Session, Birmingham, UK, *Drivers' Manoeuvre Prediction for Safe HRI.*

Visiting Researcher Talk, *May 2018*, Invited speaker, Bogotá, Colombia, *An Augmented Cognition approach in prediction of human behaviour for control in HRI.*

UKACC Day, *June 2017*, Poster Session, Birmingham, UK, *Drivers' Manoeuvre Modelling for Safe HRI.*

Dynamics and Control group seminar, *March 2017*, Invited speaker, Bristol, UK, *An Augmented Cognition approach in estimation and prediction of human behaviour for compliant control applications in HRI.*

TECHNICAL SKILLS

Computer Architectures, x86/x64, ARM Cortex-(M3,M4), ARM A series, MSP430

OS, Windows, Linux (embedded, desktop, server, HPC)

Engineering and Analysis Tools, Matlab, SPSS

Programming Languages and Technologies, C, C++, Java, HTML, Javascript (client and server), CSS, Python, Sql, mongoDB, ASM

Frameworks and Libraries, Qt, RTOS (ChibiOS), OpenCV, SFML, NumPy, Scikit-learn, Keras, tensorflow

CAD/CAE, NX6, Autocad, CATIA, DELMIA

COM Protocols, serial (RS-232, single, RS-485), I2C, SPI, parallel, ethernet, WiFi 802.11b/g/n, Bluetooth 2.0 and 4.0, USB 2.0, CAN, HDL & Verilog, HDL

Others, MS Office, Latex

PUBLICATIONS

[1] E. J. Lopez Pulgarin, T. Irmak, J. V. Paul, A. Meekul, G. Herrmann, and U. Leonards, "Comparing Model-Based and Data-Driven Controllers for an Autonomous Vehicle Task," in *Towards Autonomous Robotic Systems*, Springer, Cham, Jul. 2018, pp. 170–182. DOI: `10.1007/978-3-319-96728-8{\_}15`.

[2] E. J. Lopez Pulgarin, G. Herrmann, and U. Leonards, "Drivers' Manoeuvre Prediction for Safe HRI," *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pp. 1–9, Oct. 2018. DOI: `10.1109/IROS.2018.8593957`.

[3] ——, "Drivers' Manoeuvre Classification for Safe HRI," en, in *Towards Autonomous Robotic Systems*, ser. Lecture Notes in Computer Science, Springer, Cham, Jul. 2017, pp. 475–483, ISBN: 978-3-319-64106-5 978-3-319-64107-2. DOI: `10.1007/978-3-319-64107-2{\_}37`.

[4] E. J. Lopez Pulgarin and J. I. S. Esmeral, "Data-driven FDI for wind farms using W-SVM," in *2016 IEEE International Symposium on Intelligent Control (ISIC)*, Sep. 2016, pp. 1–6. DOI: `10.1109/ISIC.2016.7579979`.