

DR. ANA LUCIA CRUZ RUIZ

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EDUCATION

PhD in Mechanical Engineering

INRIA (French research institute for digital sciences), ENS
Rennes

Nov. 2013 – Nov. 2016 France

Master's degree in Advanced Robotics

École Centrale de Nantes

Sept. 2011 – Sept. 2013 France

Bachelor's degree in Mechatronics

Universidad Tecnológica Centroamericana

Jan. 2007 – Mar. 2011 Honduras

WORK EXPERIENCE

STEM Lead

La Scuola Possibile

2018 - 2019 Italy

PhD Fellow

INRIA - Project ENTRACTE (Anthropomorphic Action Planning
and Understanding)

2013-2016 France

Supervisor mechatronics projects

ENS Rennes

2014-2016 France

Robotics engineer (Internship)

IRCCyN & Laval University (Canada)

Mar. 2013 – Aug. 2013 France

Mechatronics engineer

3D Solutions

Jul 2010 – Dec. 2010 Honduras

TECHNICAL SKILLS

Research Areas

Robotics

Biomechanics

Signal processing

Mechanical design

Machine learning

Programming Languages

MATLAB

Python

C++

Hardware

Wearable sensors

Motion capture systems

Force plates

Serial robots

LANGUAGES

Spanish (Native)

English (Proficient)

Italian (Proficient)

French (Advanced)

REFEREES

Prof. STEPHANE CARO

@ Research director (ROMAS team) LS2N,
École Centrale de Nantes

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France

Prof. PHILIPPE CARDOU

@ Professor, Mechanical Engineering,
University of Laval

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Canada

PUBLICATIONS

Ana Lucia Cruz Ruiz, Charles Pontonnier, and Georges Dumont. **“Low-Dimensional Motor Control Representations in Throwing Motions”**, Applied Bionics and Biomechanics, 2017.

Ana Lucia Cruz Ruiz, Charles Pontonnier, and Georges Dumont. **“A synergy-based control solution for overactuated characters: application to throwing”**, Computer Animation and Virtual Worlds, 2016.

Ana Lucia Cruz Ruiz, Charles Pontonnier, Nicolas Pronost, and Georges Dumont. **“Muscle-based control for character animation”**, Computer Graphics Forum, 2016.

Ana Lucia Cruz Ruiz, Charles Pontonnier, Jonathan Levy, and Georges Dumont. **“Motion control via muscle synergies: Application to throwing”**, In Proceedings of the 8th ACM SIGGRAPH Conference on Motion in Games, MIG '15, pages 65–72. ACM, 2015.

Ana Lucia Cruz Ruiz, Charles Pontonnier, Anthony Sorel, and Georges Dumont. **“Identifying representative muscle synergies in overhead football throws”**, Computer Methods in Biomechanics and Biomedical Engineering, 18(sup1):1918–1919, 2015.

Ana Lucia Cruz Ruiz, Charles Pontonnier, and Georges Dumont. **“A bio-inspired limb controller for avatar animation”**. Computer methods in biomechanics and biomedical engineering, 17(sup1):174–175, 2014.

Ana Lucia Cruz Ruiz, Stéphane Caro, Philippe Cardou, François Guay. **“ARACHNIS: Analysis of Robots Actuated by Cables with Handy and Neat Interface Software”**, In Proceedings of the Second International Conference on Cable-Driven Parallel Robots.

François Guay, Philippe Cardou, Ana Lucia Cruz Ruiz, Stéphane Caro. **“Measuring how well a structure supports varying external wrenches”**, In Proceedings of the Second Conference in New Advances in Mechanisms, Transmissions and Applications.

OTHER INTERESTS

Advocate of STEM education in Honduras

- Founder, The Inventor’s Playground: An initiative to empower Honduran children through a high-quality STEM education. We design and direct playgrounds (after-school, weekend or vacations programs) in core STEM subjects and also in Robotics, Electronics, and Coding. Our playgrounds are spaces for imagining, making, and learning 21st-century skills.
- I have also organized campaigns to support NGOs working in education in Honduras. For instance, in 2018 I raised funds to buy computers for the Honduran Child Alliance.

Advocate of women in STEM

- STEM Goals day and mini-hackathon (STEMETTES & TD Securities), 2019, London.
- Move It Forward Torino - Women for digital and social innovation (Digital Leadership Institute), 2018, Italy.
- Speaker at the "International girls in ICT day" (International Telecommunications Union), 2016, Honduras.
- Speaker at an event by IEEE/WIE (Women in Engineering & Central American Technological University), 2016, Honduras.
- Speaker at the event "Just like robotics, you have a great future" (École Centrale de Nantes), 2016, France.
- Speaker at CIC Bank’s ceremony at Les Invalides (Fondation Centrale), 2012, Les Invalides, France.