

ANA LUCIA CRUZ

Robotics Engineer & STEM Advocate

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EDUCATION

PhD in Control and Signal Processing

INRIA, 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

RESEARCH EXPERIENCE

PhD Student

INRIA - LAAS, Project ENTRACTE

Nov. 2013 – Dec. 2016 France (Rennes, Toulouse)

- **Topic:** Low-Dimensional Control Representations for Muscle-Based Characters - Application to Overhead Throwing
- **Research Team:** INRIA - Mimetic

Robotics Research Intern

IRCCyN, Ecole Centrale de Nantes, Laval University

Mar. 2013 – Aug. 2013 France (Nantes), Canada

- **Topic:** A Graphical User Interface for the Design of Cable-Driven Parallel Robots
- **Research Team:** IRCCyN - Robotics team

OTHER EXPERIENCE

STEM Lead

La Scuola Possibile

Aug. 2018 – Present Italy (Turin)

Software engineer

Objective Software (BMW partner)

Jan. 2018 – April. 2018 Italy (Turin)

Mechatronics engineer

3D Solutions

Jul 2010 – Dec. 2010 Honduras

MY LIFE PHILOSOPHY

"There is no greater education than one that is self-driven." Neil deGrasse Tyson

MOST PROUD OF



Promoting STEM

I am organizing STEM workshops for honduran children from impoverished areas.



Inspiring women to pursue careers in tech

I motivate women/girls from difficult areas in Honduras through talks.



Winner Fondation Centrale Scholarship



Speech at Les Invalides, Paris

I had the chance to talk about my country and how the Fondation Centrale scholarship helped me become a robotics engineer.

LANGUAGES

English ●●●●●

Spanish ●●●●●

French ●●●●●

Italian ●●●●●

TECHNICAL SKILLS

Robotics Signal processing
Biomechanics Machine learning

Python MATLAB C++

ROS Simulink V-rep CATIA

LaTeX Microsoft Office Suite

PUBLICATIONS

2017

- Low-Dimensional Motor Control Representations in Throwing Motions - Applied Bionics and Biomechanics (Cruz, Pontonnier, Dumont)

2016

- A synergy-based control solution for overactuated characters: application to throwing - Computer Animation and Virtual Worlds (Cruz, Pontonnier, Dumont)
- Muscle-based control for character animation - Computer Graphics Forum (Cruz, Pontonnier, Pronost, Dumont)

2015

- Motion control via muscle synergies: Application to throwing - ACM SIGGRAPH Conference on Motion in Games (Cruz, Pontonnier, Levy, Dumont)
- Identifying representative muscle synergies in overhead football throws - Computer Methods in Biomechanics and Biomedical Engineering (Cruz, Pontonnier, Sorel, Dumont)

2014

- A bio-inspired limb controller for avatar animation - Computer Methods in Biomechanics and Biomedical Engineering (Cruz, Pontonnier, Dumont)
- ARACHNIS: Analysis of Robots Actuated by Cables with Handy and Neat Interface Software - Second International Conference on Cable-Driven Parallel Robots (Cruz, Caro, Cardou, Guay)

2013

- Measuring how well a structure supports varying external wrenches - Second Conference in New Advances in Mechanisms, Transmissions and Applications (Guay, Cardou, Cruz, Caro)

STEM ADVOCACY TALKS

Move It Forward Torino - Women for digital and social innovation

Digital Leadership Institute

📅 April 2018

📍 Italy

Speaker at the "International Girls in ICT Day"

International Telecommunications Union

📅 April 2016

📍 Honduras

Speaker at an event by IEEE/WIE (Women in Engineering)

WIE, UNITEC

📅 Mar. 2016

📍 Honduras

Speaker at the event "Just like robotics, you have a great future"

École Centrale de Nantes

📅 Feb. 2016

📍 France

Speaker at CIC Bank's ceremony at Les Invalides

Fondation Centrale

📅 Dec. 2012

📍 France

PERSONAL SKILLS

Motivated

Organized

Perseverant

Instructive speaker

Attentive to detail

Clear and concise writer

HOBBIES

- Popularizing science and technology
- Designing STEM/robotics workshops for children
- Writing
- Tutoring
- Playing piano (classical, pop/rock)

REFEREES

Prof. STEPHANE CARO

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France

Prof. PHILIPPE CARDOU

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Canada

Prof. CHARLES PONTONNIER

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