Andre Gustavo Scolari Conceicao

Associate Professor
LaR - Robotics Lab.
Department of Electrical and Computer Engineering
Federal University of Bahia

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General Information

Areas of Interests Robotics systems, computational vision, modeling, and process control.
WebSites CV Lattes Publons ORCID GoogleScholar YouTube

Education

September 2007 – September 2004 — **Ph.D. in Electrical and Computer Engineering**
Faculty of Engineering - FEUP | University of Porto - UP
Thesis : Control and Cooperation of Omnidirectional Autonomous Mobile Robots
Supervisor : Prof. Dr. Antonio Paulo G. M. Moreira
Robotics | Computer vision | Process Control | NMPC

January 2004 – January 2002 — **M.Sc. in Electrical Engineering**
Electrical Engineering Graduate Program | Pontifical Catholic University of Rio Grande do Sul - PUCRS
Dissertation : Development of an Integrated Real-Time Environment for Navigation and Control of an Autonomous Mobile Robot
Supervisor : Prof. Dr. Luis Fernando Alves Pereira
Robotics | Mobile Robots | Process Control

December 2001 – August 1995 — **B.Sc. in Electrical Engineering**
Faculty of Engineering
Polytechnical School
Pontifical Catholic University of Rio Grande do Sul - PUCRS

Academic Mobility

February 2016 — **Visiting Scholar**
Department of Electronics, Information, and Bioengineering | Politecnico di Milano
Milan - Italy
Supervisor : Prof. Dr. Andrea Bonarini
Robotics | Computer vision

May 2014 – June 2013 — **Visiting Scholar**
School of Electrical Engineering and Computer Science | Queensland University of Technology - QUT
Brisbane-Australia
Supervisor : Prof. Dr. Peter Corke
Robotics | Computer vision | Process Control

Experience

Current – February 2009 — **Associate Professor**
Department of Electrical and Computer Engineering | Federal University of Bahia - UFBA | Salvador - Brazil
- Currently member of the Electrical Engineering Post-graduation Program.
- Professor of the following subjects : Robotic Systems, Mobile Robotics, Computer Vision, Logic Systems, Digital Electronics.

Robotics | Electrical and Computer Engineering

January 2009 – August 2008 | Assistant Professor

Department of Control Engineering and Automation | Federal University of Ouro Preto - UFOP | Ouro Preto - Brazil

› Professor of the following subjects : Robotic Systems.

Robotics | Electrical and Computer Engineering | Automation

Recent Projects

FASTEN - Flexible and Autonomous Manufacturing Systems for Custom-Designed Products — 2018-2021

FASTEN mission is to develop, demonstrate, validate, and disseminate an integrated and modular framework for efficiently producing custom-designed products in Industry 4.0 context.

FASTEN is composed by 10 partners, 5 from Europe and 5 from Brazil. Specifically, from Europe the partners are : INESC TEC (the project coordinator), Embraer Portugal S. A, Politecnico Di Milano, PACE Aerospace Engineering and Information Technology and Intellimech ; from Brazil the partners are : INESC P&D Brasil (BR project coordinator), PUCRS, Bradel, Embraer and ThyssenKrupp.

Website Researchgate

Funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 777096.

Industry 4.0 | IIoT | digital transformation | open source | middleware | FASTEN

IND4FIBRE - Platform for Experimenting Alarms testing in the Framework of Industry 4.0 — 2019-2020

Testbed to integrate experimentation environments of cyber-physical systems for simulation of industrial plants, connected by a data infrastructure (IoT and WLAN), which allows a user to remotely select, configure and operate a set of equipment and sensors available in different laboratories.

IND4FIBRE partners are : INESC P&D Brasil (project coordinator), RNP (national teaching and research network).

Website Experiment video

Funding from ABDI (Brazilian Agency for Industrial Development)

Industry 4.0 | IIoT | digital transformation | IND4FIBRE

Recent Publications

A Novel Visual Lane Line Detection System for a NMPC-based Path Following Control Scheme — 2021

JOURNAL OF INTELLIGENT & ROBOTIC SYSTEMS
v. 101, p. 12, Springer.

Paper link

Authors : FRANCO, I. J. P. B. ; RIBEIRO, T. T. ; CONCEIÇÃO, A. G. S.

Autonomous mobile robots | Visual path following | Computer vision | NMPC

Adaptive Artificial Potential Fields with Orientation Control Applied to Robotic Manipulators — 2020

21st IFAC World Congress
Berlin, Germany

Experiment video Paper link

Authors : Caio Viturino, Ubiratan Junior, André G. S. Conceicao, Leizer Schnitman

Artificial Potential Fields | Robotic Manipulators

FASTEN IIoT : An Open Real-Time Platform for Vertical, Horizontal and End-To-End Integration — 2020

SENSORS
v. 20, p. 5499. MDPI

Paper link

Authors : Conceicao, A. G. S. ; GUSMEROLI, S. ; DANTAS, M. ; COSTA, F. S. ; HESSEL, F.

Industry 4.0 | IIoT | digital transformation | open source | middleware | FASTEN

Deep Learning Applied to Vegetation Identification and Removal Using Multidimensional Aerial Data — 2020

SENSORS
v. 20, p. 6187. MDPI.

Paper link

Authors : F. PINTO, M. ; G. MELO, A. ; M. HONÓRIO, L. ; L. M. MARCATO, A. ; G. S. CONCEICAO, A. ; O. TIMOTHEO, A.

Vegetation recognition | 3D point cloud | Deep learning | Unmanned Aerial Vehicles | Structural analyzes

Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle — 2020

IEEE JOURNAL OF OCEANIC ENGINEERING
v. 45, p. 799-812. IEEE

Paper link

Authors:SABACK, R. M. ; CONCEICAO, A. G. S. ; SANTOS, T. L. M. ; ALBIEZ, J. ; REIS, M.

Autonomous underwater robotics | dead-time systems | filtered Smith predictor (FSP) | nonlinear model predictive control (MPC)

Convolutional Neural Network Based Object Detection for Additive Manufacturing 2019

19th IEEE International Conference on Advanced Robotics (ICAR)
Belo Horizonte, Brazil
Paper link
Authors : LEMOS, C. B.; FARIAS, P. C. M. A.; SIMAS, E. F.; CONCEICAO, A. G. S.

Deep learning | Convolutional Neural Network | Object detection | Robotic Manipulators

Nonlinear Model Predictive Visual Path Following Control to Autonomous Mobile Robots 2018

JOURNAL OF INTELLIGENT & ROBOTIC SYSTEMS
v. 95, p. 731-743. Springer
Paper link
Authors : RIBEIRO, T.O T.; CONCEICAO, A. G. S.

Path-following Visual control | Nonlinear model predictive control | Autonomous Mobile robots

Remote control of an omnidirectional mobile robot with time-varying delay and noise attenuation 2018

MECHATRONICS
v. 52, p. 7-21. Elsevier
Paper link
Authors : SANTOS, J.; CONCEICAO, A. G. S.; SANTOS, T. L. M.; ARAUJO, H.

Dead-time compensators | Noise attenuation | Mobile robot | Time-Varying delay | Smith predictor

Remote control of an omnidirectional mobile robot with time-varying delay and noise attenuation 2018

MECHATRONICS
v. 52, p. 7-21. Elsevier
Paper link
Authors : SANTOS, J.; CONCEICAO, A. G. S.; SANTOS, T. L. M.; ARAUJO, H.

Dead-time compensators | Noise attenuation | Mobile robot | Time-Varying delay | Smith predictor

Organization of Scientific Events

Local Chair - 11th IFAC - SYROCO 2015

11th IFAC (International Federation of Automatic Control) Symposium on Robot Control - SYROCO.

Local Chair - 5th IEEE BRC 2014

5th IEEE Biosignals and Biorobotics Conference (BRC).