

# Gastone Pietro ROSATI PAPINI

## PERSONAL DATA

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| PLACE AND DATE OF BIRTH | Bagno a Ripoli (Fi), Italy   4 January 1985   |
| ADDRESS                 | Via Paolina Bonaparte 207, 55049, Viareggio (Lu), Italy   |
| PHONE                   | +39 333 4728998   |
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| WEBSITE                 | <a href="http://tonegas.it">http://tonegas.it</a>   |

## EDUCATION

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| FEB & MAR 2015 | <b>PhD+ Programme 2015</b> UNIVERSITÀ DI PISA   |
| 2012 →         | <b>PhD in Emerging Digital Technologies;</b> PERCRO LABORATORY.<br>Focus in: development of models and control systems for Electroactive Polymers for the exploitation of ocean wave energy and control theory of Human-Robot Interaction   |
| Summer School: | <i>SIDRA Summer School</i> , Systems Biology course.<br><i>BiHRI 2012 Summer School</i> , Biomechanics in Human-Robot Interaction.  |
| 2007 - 2011    | <b>Master's degree, Automation Engineering,</b> UNIVERSITY OF PISA<br><b>110/110 cum laude</b>  |
| Thesis:        | <i>Robust Force Control for Exoskeletons for Human Performance Augmentation</i> , advisor: Prof. Carlo Alberto AVIZZANO, PERCRO LABORATORY. Trajectory tracking control for arms and legs of Body Extender based on force feedback.   |
| Other Project: | <i>Modellation and Control of LemurI1b</i> . Implementation in Wolfram Mathematica and Simulink; (2 developers)<br><i>Beamrider for the Three Wheel Cart</i> . Implementation of the Beamrider guidance law for the cart in Simulink; (3 developers)<br><i>Boundary Locus Interface</i> , an interface in Matlab Script for calibrating PID using Boundary Locus technique; (3 developers)<br><i>Extension of Boundary Locus</i> , for the MIMO system; (2 developers)<br><i>Ageing System Analysis</i> . Team analysis of ageing Nonlinear Time-Varying Systems; (2 developers)<br><i>Iterative Identification Method</i> , a technique for the identification of linear continuous-time systems in Matlab Script;<br><i>Sound Player</i> . Implementation of a sound player using an ATMEL Butterfly and C language; (3 developers) |
| 2004 - 2007    | <b>Bachelor's degree, Informatics Engineering,</b> UNIVERSITY OF PISA<br><b>110/110</b>   |
| Thesis:        | <i>Protocols for Multimedia Application</i> , advisor: Prof. Enzo MINGOZZI, UNIVERSITY OF PISA. Problems and solutions of multimedia applications on Internet.<br><i>Certificate of attendance CCNA</i> in Laboratory Network, UNIVERSITY OF PISA   |
| Other Project: | <i>Network Infrastructure</i> . Development of a multi-site network for a company; (3 developers)<br><i>Base Web Server</i> , programming using C;<br><i>Card Game</i> , in C++ and Database of Beer in SQL; (2 developers)<br><i>Control System for a Overhead Travelling Crane</i> , using Matlab Simulink; (3 developers)<br><i>Ip Track</i> , a web application using PHP and SQL;  |

## AWARDS

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August 2013 | **IEEE RO-MAN 2013 Best Conference Paper Award**, GYENGJOU, SOUTH KOREA, for the paper "*Haptic Hand-Tremor Simulation for Enhancing Empathy with Disabled Users*".

## EUROPEAN PROJECT EXPERIENCE

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2014 → | **SUONO** (*Safe Underwater Operations iN Oceans*), MIUR Project  
Participation on preliminary meetings for guidelines specification.

2012 → | **PolyWEC** (*Polymeric Wave Energy Converter*), European Project  
Realization of the model and control of the dielectric elastomer in an Oscillating Water Column system. Follow the preliminary tests on the elastomeric membrane dielectric PERCRO Lab. The video results analysis on the OWC system test, realized at Edinburgh.

2012 - 2014 | **VERITAS** (*Virtual and Augmented Environments and Realistic User Interactions To achieve Embedded Accessibility DesignS*), European Project  
Realization of the control for GRAB interface for a simulation of psychogenic tremor of upper limbs. Analysis of the experimental data of the vibrations on the hand of a Parkinsonians users. Realization of the tests on the users for the GRAB's control strategy validation.

## SPINOFF EXPERIENCE

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2014 → | **QatHome**; Co-founder of QatHome s.r.l. spinoff of SCUOLA SUPERIORE SANT'ANNA; QatHome is a queue manager system for small and huge enterprise business; Manager and backend developer.

## WORK EXPERIENCE

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June 2012 - November 2012 | **Research Fellow in Teleoperation** at PERCRO LABORATORY of SCUOLA SUPERIORE SANT'ANNA, Pisa. I'm working with GUSTAVO STEFANINI ADVANCED ROBOTICS RESEARCH CENTER in teleoperation of a mobile robot through haptic feedback and with HUMANWARE S.R.L. in a robotic device for human rehabilitation.

## PERSONAL PROJECT EXPERIENCE

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2015 → | **Memory<sup>3</sup>**. A table game based on memory.  
2014 → | **Quattro**. A multiplatform Game in Unity.  
2011 → | **antruling.com**. A social website very exclusive in Django & jQuery.  
2013 | **wall2me.com**. A web application in Node.js & HTML5 Canvas.  
2007 | **Net&System Security 2007**. Cooperated with the organisation of the Internet Security convention.  
2000 | **Pinze**. Production and editing of short films.

## LANGUAGES

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ITALIAN | Mother tongue  
ENGLISH | B1

## TECHNICAL SKILLS

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| Control knowledge       | linear systems analysis and control (SISO and MIMO), nonlinear system analysis, model predictive control, teleoperation, robot modeling and control, force control, elastic joint modeling and control, actuator and sensor modeling, neural network, genetic algorithm, fuzzy logic, system navigation and guidance; |
| Programming environment | microcontrollers, multithreading, realtime system, network, router and switch;  |

## COMPUTER SKILLS

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| OS                    | Windows, Linux;   |
| Programming language  | C, C++, C++11, Java, Python, assembly MASM/GAS, Wolfram Mathematica, $\text{\LaTeX}$ , Sketch, TikZ/PGF, SQL, PHP, Javascript, Matlab script, Verilog HDL, Scala; |
| Framework and library | SDL, OpenGL, GTK+, Qt, jQuery, AngularJS, Django, Django-REST-framework, multithreading POSIX, NDS library PALib, Node.js;  |
| Program               | Matlab, Simulink, Mathematica, Unity;   |

## SOCIAL SKILLS

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Team spirit and solidarity experience developed in more of 13 years of Scouting (AGESCI), including two as Scoutmaster, especially applying to supporting in Sarajevo. High capacity of living with others, matured thanks to my Scout experience and a period of 10 years cohabitation with other students. Open to understanding different cultural realities, gained during travels and stays abroad. Organisational skills and good team work experience matured thanks to the many projects developed during the University.

## INTERESTS AND ACTIVITIES

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Scoutmaster (AGESCI), Game programming, Travelling, Snowboarding, Web development, Video editing, Rock climbing, Frisbee, Skateboarding

## PUBLICATION

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- G.P. Rosati Papini, M. Fontana, M. Bergamasco. *Desktop Haptic Interface for Simulation of Hand-Tremor*, journal on Transaction of Haptics, IEEE (Accepted with minor revision). October 2015.
- G. Moretti, G.P. Rosati Papini, M. Alves, M. Grases, R. Vertechy, M. Fontana. *Analysis and Design of an Oscillating Water Column Wave Energy Converter With Dielectric Elastomer Power Take-Off*, ASME 2015 34th International Conference on Ocean, Offshore and Arctic Engineering, May 2015.
- G. Moretti, G.P. Rosati Papini, M. Fontana, R. Vertechy. *Hardware in the loop simulation of a dielectric elastomer generator for oscillating water column wave energy converters*, OCEANS, 2015 IEEE, May 2015.
- R. Vertechy, G.P. Rosati Papini, M. Fontana. *Reduced Model and Application of Inflating Circular Diaphragm Dielectric Elastomer Generators for Wave Energy Harvesting*, journal of Vibration and Acoustics, February 2015.
- R. Vertechy, M. Fontana, G.P. Rosati Papini, D. Forehand. *In-tank tests of a dielectric elastomer generator for wave energy harvesting*, SPIE Smart Structures and Materials+ Nondestructive Evaluation and Health Monitoring, 2014.
- L. Boffi, M. Fontana, G.P. Rosati Papini. *Supporting the designers to build empathy with people with Parkinson's disease: the role of a hand tremor simulating device and of user research with end-users*, DRS, 2014.
- G.P. Rosati Papini, R. Vertechy, M. Fontana *Dynamic Model of Dielectric Elastomer Diaphragm Generators for Oscillating Water Column Wave Energy Converters*, ASME 2013 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. November 2013.
- G.P. Rosati Papini, M. Fontana, R. Vertechy, M. Carrozzino, M. Bergamasco. *Haptic hand-tremor simulation for enhancing empathy with disabled users*, RO-MAN, 2013 IEEE. Best Conference Paper Award, Gyengjou, South Korea, August 2013.
- E. Ruffaldi, M. Satler, G.P. Rosati Papini, C.A. Avizzano. *A flexible framework for mobile based haptic rendering*, RO-MAN, 2013 IEEE. August 2013.
- R. Vertechy, M. Fontana, G.P. Rosati Papini, M. Bergamasco. *Oscillating-water-column wave-energy-converter based on dielectric elastomer generator*, SPIE Smart Structures and Materials+ Nondestructive Evaluation and Health Monitoring, August 2013.
- G.P. Rosati Papini, and C.A. Avizzano. *Transparent Force Control for Body Extenders*, RO-MAN, 2012 IEEE, September 2012.