Curriculum Vitae

Personal information

Surname(s) / First name(s)	**Castello Ferrer, Eduardo**
Address(es)	MIT Media Lab, 75 Amherst St, Cambridge, MA 02139, Boston (USA)
Email(s)	ecstll@mit.edu
Nationality(-ies)	Spanish
Date of birth	1/12/1984
Gender	Male

Work experience

Dates	Sep 2017 - Present
Occupation or position held	Postdoctoral Fellow
Name and address of employer	Human Dynamics Group, MIT Media Lab, Massachusetts Institute of Technology, 77 Mass. Ave., E14/E15, Cambridge, MA 02139-4307 USA.
Main activities and responsibilities	Exploring the combination of swarm robotic systems and blockchain technology to implement new security, behavior and business models for distributed robotic systems.

Dates	Oct 2016 - Sep 2017
Occupation or position held	Postdoctoral Associate
Name and address of employer	Open Agriculture Initiative, MIT Media Lab, Massachusetts Institute of Technology, 77 Mass. Ave., E14/E15, Cambridge, MA 02139-4307 USA.
Main activities and responsibilities	Conducting research on the synergy between robotics and controlled-environment devices (Food Computers) to discover, analyze, and integrate new techniques for precision agriculture.

Dates	Feb 2016 - Oct 2016
Occupation or position held	Research Affiliate
Name and address of employer	Open Agriculture Initiative, MIT Media Lab, Massachusetts Institute of Technology, 77 Mass. Ave., E14/E15, Cambridge, MA 02139-4307 USA.
Main activities and responsibilities	Design and implement new decentralized models for the whole range of controlled environment agriculture systems (Food Computer) proposed at the Open Agriculture Initiative.

Dates	Oct 2013 - Dec 2013
Occupation or position held	Research Intern
Name and address of employer	Bristol Robotics Lab (BRL), University of the West of England, Frenchay Campus, Coldharbour Ln, Bristol BS16 1QY, UK.
Main activities and responsibilities	Designed and conducted extensive real-hardware experiments involving swarms of robots. Experiments involved the use of several E-puck robots in order to develop and analyze adaptive foraging controllers. This internship culminated in the submission of a research paper to the Swarm Intelligence Journal.

Dates	Sep 2011 - Mar 2012
Occupation or position held	Research Intern
Name and address of employer	Institute of Automatic Control Engineering (LSR), Technische Universität München (TUM), Theresienstrasse 90, D-80333 München, Germany
Main activities and responsibilities	Designed, tested and implemented several communication modules for the EU FP7 BEAMING project. These modules were used in order to teleoperate robotic avatars with real-time capabilities. This internship led to a collaboration project between LSR and Osaka University.

Dates	Apr 2009 - Mar 2011
Occupation or position held	Researcher
Name and address of employer	Osaka University, 1-3 Machikaneyama, Toyonaka, Osaka, 560-8531, Japan. TEL:+81668506360
Main activities and responsibilities	Conducted research as part of the Osaka University project Yuragi. This project included the design, development, and simulation of robotic controllers based on Neural Networks, Genetic Algorithms, Fuzzy Logic and Stochastic Control for the following robot platforms: E-puck, Khepera, Katana, Wakamaru. The research conducted led to the publication of a conference paper.

Education and training

Dates	Apr 2012 - Sep 2016
Title of qualification awarded	PhD. Eng. Robotics
Principal subjects covered	Multi-Agent Systems, Swarm Robotics, Stochastic Control, Distributed Systems
Name and type of organization providing education and training	Osaka University (Japan)
Level in national or international classification	1st - First Class Honours

Dates	Apr 2009 - Mar 2011
Title of qualification awarded	M.Eng. Robotics
Principal subjects covered	Advanced Robotic Systems, Sensory Information Processing, Pattern Recognition, Imaging Systems
Name and type of organization providing education and training	Osaka University (Japan)
Level in national or international classification	1st - First Class Honours

Dates	Sep 2006 - Jul 2007
Title of qualification awarded	Bsc.(Hons) Intelligent Systems
Principal subjects covered	Neural Networks and Genetic Algorithms, Data Mining, Fuzzy Logic, Scientific Computing, Intelligent Systems Programming
Name and type of organization providing education and training	University of Portsmouth (UK)
Level in national or international classification	2:1 - Upper Second Class Honours

Dates	Sep 2003 - Jun 2006
Title of qualification awarded	HND. Software Engineering
Principal subjects covered	Structured Programming, Systems Analysis, Software Engineering, Networking, Database Design
Name and type of organization providing education and training	ESAT (Escola Superior D'Art i Tecnologia) (Spain)
Level in national or international classification	2:1 - Upper Second Class Honours

Technical skills and competences

Programming: C/C++, Java, Python, R, Perl, PHP, Lisp, UNIX shell scripting, GNU make, AppleScript, SQL, DVCS (Mercurial, git), VCS (RCS, CVS, SVN, SCCS), and others

Robotics Software: ROS, Player/Stage/Gazebo, Webots, OpenRTM-aist

Robotics and Machine Learning Libraries: OpenCV, Torch, Caffe, mlpack

Computer-Aided Design: 3DS SolidWorks, Cadence OrCAD, SPICE, pst-circ

MATLAB experience: linear algebra, Fourier transforms, nonlinear numerical methods, polynomials, statistics, N-dimensional filters, visualization.

MATLAB toolboxes: neural networks, communications, control system, filter design, genetic algorithm and direct search, signal processing, system identification.

Embedded Systems: Software and hardware development with several MCU and DSP platforms (e.g., Motorola MCU's, Texas Instruments DSP's, Atmel ATmega MCU's, Microchip PIC MCU's, and others)

Instrumentation and Control: dSPACE hardware (e.g., RTI1104) and Control Desk software, Simulink, LabVIEW and other National Instruments control and data acquisition hardware and software (e.g., MIO, SMIO, DSA, DMM, and others)

Information Technology: Networking (UDP, TCP, ARP, DNS, Advanced routing & switching, QoS, Firewall design), Service (Apache, SQL, MediaWiki, POP, IMAP, SMTP, application-specific daemon design)

Computer Applications: TEX (LATEX, BIBTEX, PSTricks), most common productivity packages (for Windows, OS X, and Linux platforms), Vim

Operating Systems: Linux, BSD, Microsoft Windows family, Apple OS X, IRIX, AIX, Solaris, and other UNIX variants

Personal skills and competences

Mother tongue(s)

Spanish, Catalan

Other language(s)

English (Fluent), Italian (Fluent), Japanese (Conversational)

Self-assessment
European level(*)

	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
Italian	C2	C1	C1	C1	C1
Japanese	B2	B2	B2	B2	B2

(*) *Common European Framework of Reference (CEF) level*

Publications

Eduardo Castello, "The blockchain: a new framework for robotic swarm systems", *in Future Technologies Conference (FTC 2017), Vancouver, Canada. November 29 - 30*, 2017. *Preprint avaible at: https://arxiv.org/abs/1608.00695*

Eduardo Castello, "A wearable general-purpose solution for Human-Swarm Interaction", *in Future Technologies Conference (FTC 2017), Vancouver, Canada. November 29 - 30*, 2017. *Preprint avaible at: https://arxiv.org/abs/1704.08393*

Eduardo Castello, Jake Rye, Gordon Brander, Tim Savas, Douglas Chambers, Hildreth England and Caleb Harper, "Personal Food Computer: A new device for controlled-environment agriculture", *in Future Technologies Conference (FTC 2017), Vancouver, Canada. November 29 - 30*, 2017. *Preprint avaible at: https://arxiv.org/abs/1706.05104*

Eduardo Castello, Tomoyuki Yamamoto, Fabio Dalla Libera, Wenguo Liu, Alan F. T. Winfield, Yutaka Nakamura and Hiroshi Ishiguro, "Adaptive foraging for simulated and real robotic swarms : the dynamical response threshold approach", *Swarm Intelligence*, 2016.

Eduardo Castello and Y. Sinan Hanay, "Demo : A Low-cost, Highly Customizable Robotic Platform for Testing Mobile Sensor Networks", *in ACM Symposium on Mobile Ad Hoc Networking and Computing (MOBIHOC 2015), Hangzhou, China. June 22 - 25*, 2015.

Eduardo Castello, Tomoyuki Yamamoto, Yutaka Nakamura and Hiroshi Ishiguro, "Foraging Optimization in Swarm Robotic Systems based on an Adaptive Response Threshold Model", *RSJ International Journal of Advanced Robotics*, 2014.

Eduardo Castello, Tomoyuki Yamamoto, Yutaka Nakamura and Hiroshi Ishiguro, "Foraging in Real and Simulated environments for a Robotic Swarm based on an Adaptive Response Threshold Model", *in IEEE International Conference on Robotics and Automation (ICRA 2014), Multi-Robot Systems Workshop. Hong Kong, China. May 31 - June 7*, 2014.

Eduardo Castello, Tomoyuki Yamamoto, Yutaka Nakamura, Yoshio Matsumoto and Hiroshi Ishiguro, "Task Allocation for a Robotic Swarm Based on an Adaptive Response Threshold Model", *in ICCAS, International Conference on Control, Automation and Systems, 2013.* **(Student Paper Award)**

Eduardo Castello, Tomoyuki Yamamoto, Yutaka Nakamura, Yoshio Matsumoto and Hiroshi Ishiguro, "Dynamic Task Assignment for a Multi-Robot System Based on the Attractor Selection Model", *in IPSJ. Conference on Social Intelligence, Kobe*, 2009.

Patents

Castello, Eduardo. 2015. Highly-Customizable Robotic Platform for Testing Mobile Sensor Networks. Spanish Patent Application P201500298, filed April, 2015. Patent Pending.

Honors and Awards

Date	Sep 2017
Award	Marie Skłodowska-Curie Global Fellowship (MSCA-IF-GF) offered by the European Commission (10% success rate)

Date	Apr 2014
Award	Yoneyama Scholarship offered by the Rotary Yoneyama Memorial Foundation (25 merit-based scholarships awarded over a base of 25,000 students)
Date	Jul 2013
Award	Murata Overseas Scholarship Academic Award offered by the Murata Foundation (10 merit-based scholarships awarded over a base of 10,000 students)
Date	Apr 2012
Award	1 of 25 Honors Scholarships offered by the Japanese Student Service Organization (JASSO)
Date	Oct 2010
Award	1 of 10 Monbukagakusho Research Scholarships offered by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT)

Media Collaborations

Dates	Oct 2014 - Present
Name of the media	El País
Main activities and responsibilities	Columnist for the Science and Technology section
Dates	Oct 2014 - Present
Name of the media	El Mundo
Main activities and responsibilities	Columnist for the Innovation and Entrepreneurship section
Dates	Dec 2013 - Aug 2014
Name of the media	El País
Main activities and responsibilities	"Entre Replicantes" - Robotics Blog

Lectures & Presentations

Date	January 2016
Venue	Global Robot Expo (GREX)
Topic	Swarm Robotics: From academic-research to widespread industrial use
Date	March 2014
Venue	Fundación Valenciana de Estudios Avanzados (FVEA)
Topic	Big challenges of Japanese society : An open window to the world of robots
Date	March 2014
Venue	Universidad de Valencia (History of Art and Visual Culture Department)
Topic	Digital culture in Japan : An open window to the world of robots
Date	November 2013
Venue	British Consulate-General Osaka
Topic	Cognitive Robotics in Japan

References

Alex ‘Sandy’ Pentland, Professor, Human Dynamics Group, Media Lab, Massachusetts Institute of Technology, 77 Mass. Ave., E14/E15, Cambridge, MA 02139-4307. (USA) TEL: +1 (617) 253-3818

Hiroshi Ishiguro, Professor, Graduate School of Engineering Science, Toyonaka Campus, Osaka University, 1-3 Machikaneyama, Osaka, 565-8531. (Japan) TEL: +81-6-6850-6360

Caleb Harper, Principal Investigator, Open Agriculture Initiative, Media Lab, Massachusetts Institute of Technology, 77 Mass. Ave., E14/E15, Cambridge, MA 02139-4307. (USA) TEL: +1 (617) 715-2519

Alan FT Winfield, Professor, Faculty of Environment and Technology, University of the West of England, Bristol Coldharbour Lane, Bristol BS16 1QY. (UK) TEL: +44 117 328 2644

Yoshio Matsumoto, Group Leader, Service Robotics Research Group, Intelligent Systems Institute, National Institute of Advanced Industrial Science and Technology (AIST),Tsukuba Central 2, 1-1-1 Umezono, Tsukuba, Ibaraki 305-8568 (Japan) TEL: +81-2-9861-3427