

Eduardo R. Torres-Jara

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Overview

Creative and highly motivated technology leader with more than 19 years of experience and accomplishments in the following areas:

- **Technical Management:** Directed multidisciplinary projects from conception to completion in the areas of management software, vision and robotics networking and communication, and embedded automation and robotics software. Delivered results in highly uncertain and fast paced robotics projects that included the development of electrical and mechanical hardware as well as software.
- **Entrepreneurship/Innovation:** Co-founded 4 technological startups in the areas of car electronics, industrial automation, management software, and robotics. Served as a mentor in the MIT Skoltech innovation program.
- **Research/Engineering:** Founded the first Sensitive Robotics Laboratory in the country. Developed creative a new approach to robotics that has been recognized by several awards (including a NASA award), 4 granted and 4 pending patents, and wide media coverage.
- **Teaching/Leadership:** As professor developed and taught 3 highly multidisciplinary classes with laboratories recognized by some students as the best class they have taken during their studies. Redesigned the robotics PhD and MS programs, and reorganized the graduate admission process for a robotics program.

Education

Massachusetts Institute of Technology (MIT)

Cambridge, MA, USA

PHD. IN ARTIFICIAL INTELLIGENCE

Feb.2002 - Feb. 2007

- Minor in Business Administration. Sloan School of Management MIT

Massachusetts Institute of Technology (MIT)

Cambridge, MA, USA

SM. IN ARTIFICIAL INTELLIGENCE

Sept.1999 - Feb. 2002

Escuela Politécnica del Ejército (ESPE)

Quito, Ecuador

B.S. (INGENIERO) IN ELECTRONIC AND COMPUTER ENGINEERING

Sept. 1989 - May. 1995

- Best Student Award. Class 1995

Selected Professional Experience

STANFORD RESEARCH INSTITUTE (SRI) INTERNATIONAL

Menlo Park, CA

SENIOR RESEARCH CONTROL ENGINEER

2015 - Present

- Business Development for Commercial and Government clients. Includes: client engagement, concept development, team building, budget management, and project implementation.
- Designing and implementing robotic control architectures. Examples include: surgical arm control, multimodal arm response, system identification, and balance control of unstable vehicles

ROBOT REBUILT

Cambridge, MA

CO-FOUNDER AND PRESIDENT

2010 - 2016

- Developed business plan, looked for funding, and advertised the company in talk show and newspapers.
- Developed mechanical and electrical hardware as well as the embedded software for the prototype.
- Managed the high level software development team (3 people).

WORCESTER POLYTECHNIC INSTITUTE (WPI)

Worcester, MA

ASSISTANT PROFESSOR. COMPUTER SCIENCE DEPARTMENT. ROBOTICS ENGINEERING PROGRAM (RBE).

2010 - 2014

- Founded and directed the first Sensitive Robotics laboratory in the country with initial funding of 150K and 10 and more than 10 researchers.
- Led 5 student teams to build 5 state of the art robots in a three-year period.
- Directed 1 PhD, 3 SM theses, 4 BS theses.
- Developed curriculum and taught 3 (two graduate and one undergraduate) highly interdisciplinary classes for RBE in three years.
- Led redesigning of the Master's and Doctoral academic programs and admissions for RBE. The program requirements and the admission process were optimized to reduce the time spend by the faculty and students in the process while improving the quality of the program as a whole.

HARVARD UNIVERSITY / MASSACHUSETTS INSTITUTE OF TECHNOLOGY*Cambridge, MA*

POST-DOCTORAL ASSOCIATE. MICROROBOTICS LABORATORY/DISTRIBUTED ROBOTICS GROUP

2009-2010

- Developed and patented a flexible actuator based in Shape Memory Alloy for a reconfigurable surface for the Programmable Matter and Chemical Robots DARPA projects.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)*Cambridge, MA*

POST-DOCTORAL ASSOCIATE. COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LAB. HUMANOID ROBOTICS.

2007-2008

- Developed precision manipulation using the Sensitive Manipulation approach. Demonstrated that sensing, instead of precise position control, enables dexterous manipulation.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)*Cambridge, MA*

RESEARCH ASSISTANT. COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LAB. HUMANOID ROBOTICS GROUP

1999-2007

- Developed a radically new method for robotic manipulation known as Sensitive Manipulation
- Communicate with DARPA to meet their goals and our research agenda
- Invented a biologically inspired skin for robotic manipulation and a miniaturized version of Series Elastic Actuators
- Developed new robotic hands with reduced mechanical impedance and force control
- Developed a platform for implementing evolutionary algorithms in hardware
- Developed robots: Obrero, Self-feeding. Co-developed robots: Cardea, Coco

AUTOTRACK (Car electronics and data communication)*Quito, Ecuador*

CTO AND CO-FOUNDER OF THE TELECOM DIVISION

1999

- Managed development team (5 members) for automatic gasoline distribution to fleets. The multidisciplinary team developed high level and embedded software and the hardware for the stations in 3 months. The system's performance was superior because provided secure transactions and reliable operation while maintaining the cost.
- Coordinated the deployment of the whole system in pilot stations.

ENKASOFT (Administrative software and data communications)*Quito, Ecuador*

CTO AND CO-FOUNDER

1997-1999

- Developed the business plan and secure 100K/year income with a two years contract.
- Designed computer and communication networks for 10 clients.
- Support sales and marketing team.
- Negotiated with software and hardware providers to offer our customers cost effective solutions.

CORPOIMPEX (Electronics)*Cuenca, Ecuador*

BUSINESS PARTNER

1995-1996

- Created business plan to introduce a new industrial controller uMactic-1
- Led a team to designed and built the controller uMactic-1
- Developed marketing and sales strategy for the company.
- Support sales and provided technical support.

Additional Information

COMPUTER SKILLS Solidworks (Mech. design), Altium (PCB design), Matlab, Simulink, Programming languages (C, C++, Assembly, Python, Ruby), Desktop programs for PC and MAC.

LANGUAGES Native Spanish. Fluent in English. Basic knowledge of Portuguese, Japanese, and French

PATENTS 4 US Patents: US 8101904 B2, US 7701202 B2, US 8662552 B2, US 8733099 B2

PUBLICATIONS Available at <http://users.wpi.edu/~etorresj/publications.html>

AWARDS/HONORS CLAWAR Innovation Award, July, 2013. National Science Foundation (NSF) Panelist 2012. NASA Tech Brief Award. July, 2011. Speaker to the Japan-America Frontiers of Engineering Symposium (JAFOE). National Academy of Engineering, US. Japanese Engineering Academy. June, 2011. One of the 100 most influential in the Massachusetts Latino Community. Newspaper El Planeta, MA, 2011. Raising Star in Science. WGBH TV, MA, 2007. One of the Ecuadorians of the decade. Magazine COSAS, Ecuador. 2005.

LEADERSHIP Founder, MIT Ecuadorian Student Association. Organizer, RSS2013 sensitive robotics workshop. Program committee, RSS2007 manipulation workshop. Organizer, RSS2006, RSS2005 manipulation workshops.

SELECTED INVITED TALKS MIT Lincoln Laboratory, MA. 2013. Mitsubishi Electric Research Laboratories (MERL), MA. 2012. Foundations of Robotics Seminar. Robotics Institute. Carnegie Mellon University, 2011. Japan-America Frontiers of Engineering Symposium (JAFOE), Osaka, Japan. 2011.

SELECTED PRESS New York Times. Sept. 1, 2014. Boston Globe. Front Page Innovation section. Dec., 2012. Talk show MOTHERS OF INVENTION: ROBOTS. Scott Krisner. Red Star Union. Dec. 11, 2012. Discovery Channel. Program 2111. Technologies in 100 years, June 2012. CNET, 2012. Time Magazine, TIME.com, Dec. 7, 2011. Time Magazine, Techland, TIME.com, Dec. 21, 2011. National Geographic Entertainment, Yael Luttwak, (2012-2013). PodCast: WGBH TV channel, Teacher's Domain, iTunes. 2007

EXTENDED RESUME

Additional Professional Experience

BISMARK (Telecommunications)

Quito, Ecuador

CONSULTANT

1997-1998

- Designed interfaces to connect to a cellular data packet (CDPD) network

ENKADOR (Textile company)

Quito, Ecuador

COMPUTER NETWORK ADMINISTRATOR

1996

- Managed the IT team to support a network of 50 PCs and 6 servers in the plant and headquarters
- Developed solutions to integrate production machines to the network

CORPOIMPEX (Electronics)

Cuenca, Ecuador

CONSULTANT/BUSINESS PARTNER

1995-1996

- Designed and built the controller uMATIC-1 for industrial automation. This product was fully assembled in the country
- Sale the product to the local industry and provide technical support
- Developed the marketing and sale strategy for the company

AT&T Paradyne. Data communication company

Quito, Ecuador

COMPUTER NETWORKING ENGINEER

1995

- Designed large computer networks for large local companies like Banks
- Deployed the equipment in the client's facilities

Escuela Politécnica del Ejército (ESPE)

Quito, Ecuador

RESEARCH ASSISTANT

1993-1994

- Developed a robot capable of navigating in unknown environments. First robot developed in Ecuador

CRILAMYT

Quito, Ecuador

COMPUTER NETWORK ADMINISTRATOR

1992-1993

- Managed a Novell network of 25 nodes.

Academic Services

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| 2013 | Organizer , Sensitive Robotics Workshop. Robotics Science and Systems (RSS) | Berlin, Germany |
| 2012 | Panelist , NSF National Robotics Initiative, January | DC, US |
| 2012 | Panelist , NSF National Robotics Initiative, February | DC, US |
| 2012 | Reviewer , IEEE Transactions on Mechatronics | US |
| 2011 | Panelist , NSF Grant Review, Cyber Physical Systems | DC, US |
| 2012 | Reviewer , IROS | US |
| 2010 | Reviewer , IEEE Transactions on Robotics | |
| 2010 | Reviewer , IEEE Robotics and Automation Magazine | |
| 2010 | Reviewer , International Conference on Robotics and Automation (ICRA) | |
| 2009 | Reviewer , Autonomous Robots Journal | |
| 2008 | Program Committee , Manipulation Workshop. RSS | |
| 2007 | Program Committee , Manipulation Workshop. RSS | |
| 2007 | Reviewer , Manipulation Workshop. RSS | |
| 2006 | Reviewer , 50 Years of Artificial Intelligence | Switzerland |
| 2006 | Reviewer , International Journal of Robotics Research IJRR06 | |
| 2006 | Organizer , Manipulation Workshop, RSS | |
| 2006 | Reviewer , International Journal of Humanoid Robotics (IJHR/AMD) | |
| 2005 | Reviewer , International Journal of Humanoid Robotics (IJHR/AMD) | |
| 2005 | Organizer , Manipulation Workshop, RSS | |

Invited Talks

2015	Tecnológico de Monterrey. Liderés Académicos	Querétaro, México
2013	MIT Lincoln Laboratory. Robotics Seminar	Lexington, MA, US
2012	Mitsubishi Electric Research Laboratories (MERL)	Cambridge, MA, US
2012	Autonomous System Laboratory.ETH	Zürich, Switzerland
2012	Universidad del Azuay	Cuenca, Ecuador
2012	Computer Science Colloquium, Worcester Polytechnic Institute (WPI)	Worcester, MA, US
2011	Foundations of Robotics Seminar. Robotics Institute. Carnegie Mellon University	Pittsburg,PA, US
2011	Japan-America Frontiers of Engineering Symposium (JAFOE). National Academy of Engineering, US. Japanese Engineering Academy	Osaka, Japan
2011	MIT Lincoln Laboratory	Lexington, MA, US
2010	Draper Laboratory	Boston, MA, US
2008	Cognitive Machines Group. MIT Media Laboratory	Cambridge, MA
2007	iRobot Corporation	Burlington, MA, US
2007	Xerox Parc	Palo Alto, CA, US
2006	Analog VLSI and Biological Systems Group, MIT	Cambridge, MA, US
2006	MIT CSAIL Manipulation Reading Group	Cambridge, MA, US
2006	Waseda Universtiy	Tokyo, Japan

Press

2014	Newspaper , New York Times. Brainy, Yes, but Far From Handy. Building a Robot With Human Touch. Sept. 1, 2014	New York, US
2013	Online news , techrmergence.com. "Sensitive" Robotics Isn't What You Think – with WPI's Eduardo Torres-Jara, CEO of Robot Rebuilt	Online
2013	Newspaper , El Mercurio. January, 2013	Cuenca, Ecuador
2012	Newspaper , Boston Globe. Front Page Innovation section. December, 2012	Boston, MA
2012	Webpage , Boston Globe - better fingers may be key to better robots	Boston, MA, US
2012	Webpage , Boston Globe - MIT spin-out Robot Rebuilt wants to give robotic hands a better sense of touch	Boston, MA, US
2012	Talk show , MOTHERS OF INVENTION: ROBOTS. Boston Globe Columnist Scott Krisner. Red Star Union.December 11, 2012	Cambridge, MA
2012	Webpage , Ecuadorian Embassy. September, 2012	Washington, DC, US
2012	TV , Discovery Channel. Program 2111. Technologies in 100 years. Filmed at WPI, June 2012.	
2012	Magazine , Revista Semana, El Expreso Newspaper. April 15, 2012	Guayaquil, Ecuador
2012	Magazine , Tu Revista Latina. Stars section. Ma.Daniela Rengel. April, 2012	NJ, US
2012	Webpage , Worcester Polytechnic Institute (WPI). <i>Making Robots More Versatile By Letting Them Feel the World</i>	Worcester, MA, US
2012	Magazine , WPI research magazine: Robots for the real world	Worcester, MA, US
2012	Video , WPI You Tube Channel: Giving Robots the Sense of Touch	Worcester, MA, US
2012	On-line Magazine , CNET - building a sensitive robot, and a future politician	Online
2012	Webpage , PHYS.ORG - Robot Rebuilt get a grip on wine-serving robot	Online
2012	Webpage , Gizmag - MIT spin-off working on sensitive robotic hands	Online
2011	On-line Magazine , Time Magazine, Where's Our Rosie? Why We Don't Have Domestic Robots Yet, Techland, TIME.com. Keith Wagstaff. December 21, 2011	Online
2011	On-line Magazine , Time Magazine, Squishy, Soft Robots Crawl Their Way to the Cutting Edge of Science, Techland, TIME.com. Keith Wagstaff. December 7, 2011	Online
2011	Magazine , Diners Club Magazine. Robot. Esteban Mayorga. August, 2011	Quito, Ecuador
2012	TV , National Geographic Entertainment. Yael Luttwak	US
2012	Video , WPI News. Sensitive Manipulation Research	Worcester, MA, US
2011	Newspaper , El Planeta. Powermeter.	US
2011	Newspaper , El Mercurio.	Cuenca, Ecuador
2008	Newspaper , El Tiempo.	Colombia
2008	Textbook , Modern Control Systems. Robot photos. 11th edition. Pearson	NJ, US

2007	Newspaper Magazine , Líderes	<i>Quito, Ecuador</i>
2007	Newspaper , Chosun Ilbo.	<i>Korea</i>
2007	Podcast , WGBH TV channel, Teacher's Domain, iTunes.	<i>Boston, MA, US</i>
2007	TV , CBC	<i>US</i>
2007	TV , AT&T channel	<i>US</i>
2007	TV , CNN Future Summit	<i>US</i>
2007	TV , KBS	<i>Korea</i>
2006	Magazine , Match du Monde. No.7	<i>France</i>
2006	Newspaper , Boston Globe.	<i>Boston, MA</i>
2006	Magazine , Popular Science. 5 paths to the walking, talking, pie-baking humanoid robot.	<i>US</i>
2006	Magazine , New Scientist	<i>US</i>
2005	Magazine , Intelligent Systems, IEEE	<i>US</i>
2005	Newspaper , El Comercio. Los robots son la pasión constante de un cuencano.	<i>Quito, Ecuador</i>
2005	Magazine , COSAS.	<i>Quito, Ecuador</i>
2001	Magazine , Clubing.	<i>Quito, Ecuador</i>
1996	TV , Dentro y Fuera. Ecuavisa.	<i>Quito, Ecuador</i>