EDUARDO TORRES-JARA
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OVERVIEW

Creative and highly motivated technology leader with more than 18 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. Serves as a mentor in the MIT Skoltech innovation program.

Research/Engineering: 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/Management: Developed and taught 3 highly multidisciplinary classes with laboratories recognized by some of the students as the best class they have taken during their studies. Lead the redesign of the robotics PhD and MS program, and reorganized the graduate admission process for the robotics program.

EDUCATION

- Massachusetts Institute of Technology (MIT) — Cambridge, MA
  Ph.D. Electrical Engineering and Computer Science — 2007
  - Minor in Business Administration. Sloan School of Management MIT.
- Massachusetts Institute of Technology — Cambridge, MA
  SM Electrical Engineering and Computer Science — 2002
- Escuela Politécnica del Ejército — Quito, Ecuador
  BS (Ingeniero) in Electronics and Computer Engineering. — 1995

SELECTED PROFESSIONAL EXPERIENCE

ACADEMIA/RESEARCH

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 — **Cambridge, MA**
Post-Doctoral Associate. Computer Science and Artificial Intelligence Lab. Humanoid Robotics Group. **2007-2008**

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

EDUARDO TORRES-JARA

INDUSTRY/ENTREPRENEURSHIP

Robot Rebuilt **Cambridge, MA**
Co-Founder and President **2010- 2014**

- Wrote business plan, look for funding, and advertise 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).

AUTOTRACK (Car electronics and data communication firm) **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 comm.) **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 (5) 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++, Assemby, Phyton,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, US8733099 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

INVITED TALKS

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

PRESS

- New York Times. Brainy, Yes, but Far From Handy. Building a Robot With Human Touch. Sept. 1, 2014
- Boston Globe. Front Page Innovation section. Boston, MA. December, 2012.
    - Boston Globe - better fingers may be key to better robots
    - Boston Globe - MIT spin-out Robot Rebuilt wants to give robotic hands a better sense of touch
- Talk show MOTHERS OF INVENTION: ROBOTS. Boston Globe Columnist Scott Krisner. Red Star Union. Cambridge, MA. December 11, 2012.
- El Mercurio Newspaper. Ecuador. January, 2013.
- Featured in Ecuadorian Embassy Web page. September, 2012
- Discovery Channel. Program 2111. Technologies in 100 years. Filmed in WPI, June 2012.
- Revista Semana, El Expresso Newspaper. Ecuador. April 15, 2012.
- Latina Magazine. Stars section. April, 2012
- WPI main page: Making Robots More Versatile By Letting Them Feel the World
- WPI research magazine: Robots for the real world.
- WPI You Tube Channel: Giving Robots the Sense of Touch.
- Magazines:
    - CNET - building a sensitive robot, and a future politician. 2012
    - PHYS.ORG - Robot Rebuilt get a grip on wine-serving robot. 2012
    - gizmag - MIT spin-off working on sensitive robotic hands. 2012
    - Time Magazine, **Where's Our Rosie? Why We Don't Have Domestic Robots Yet**, Techland, TIME.com. Keith Wagstaff. December 21, 2011
    - Time Magazine, **Squishy, Soft Robots Crawl Their Way to the Cutting Edge of Science**, Techland, TIME.com. Keith Wagstaff. December 7, 2011
    - Diners Club Magazine. Esteban Mayorga, August, 2011, Ecuador.
    - Tu Revista Latina, Ma.Daniela Rengel, NJ, 2012.
    - Popular Science, New Scientist, CNET, Lideres (Ecuador), COSAS (Ecuador), Clubing (Ecuador), Intelligent Systems, IEEE , MachDuMonde (France).
- Videos:
    - WPI News. Sensitive Manipulation Research. 2012
    - National Geographic Entertainment, in preparation, Yael Luttwak, (2012-2013).
- PodCast: WGBH TV channel, Teacher's Domain, iTunes. 2007

- ***TV:*** CBC, KBS (Korea), AT&T channel, CNN Future Summit, "Dentro y Fuera" (Ecuavisa, Ecuador).
- ***Newspapers:*** Boston Globe (USA), El Planeta (USA), El Comercio (Ecuador), El Mercurio(Ecuador), Chosun Ilbo(Korea).Boston Globe, El Planeta, El Comercio (Ecuador), El Mercurio (Ecuador), El Tiempo (Colombia).

- **Textbook photos**: "Modern Control Systems" 11th edition. Prentice Hall.

ACADEMIC SERVICES

- Organizer, Sensitive Robotics Workshop, RSS 2013, June 2013.
- Panelist, NSF National Robotics Initiative, March, 2012.
- Panelist, NSF National Robotics Initiative, Feb., 2012.
- Reviewer, IEEE Transactions on Mechatronics, Jan, 2012.
- Panelist, NSF Grant Review, Cyber Physical Systems, 2011.
- Reviewer, IROS 2011.
- Reviewer, IEEE Transactions on Robotics, 2010.
- Reviewer, IEEE Robotics and Automation Magazine, 2010.
- Reviewer, International Conference on Robotics and Automation, ICRA2010.
- Reviewer, Autonomous Robots Journal, 2009.
- Program Committee, Manipulation Workshop, RSS2008.
- Program Committee, Manipulation Workshop, RSS2007.
- Reviewer, Manipulation Workshop, RSS 2007.
- Reviewer, 50 Years of Artificial Intelligence. 2006.
- Reviewer, International Journal of Robotics Research IJRR06.
- Organizer, Manipulation Workshop, RSS2006.
- Reviewer, International Journal of Humanoid Robotics, IJHR/AMD/2006, 2005.
- Organizer, Manipulation Workshop, RSS2005.

ADDITIONAL PROFESSIONAL EXPERIENCE

ACADEMIA/RESEARCH

MASSACHUSETTS INSTITUTE OF TECHNOLOGY **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.
- Undergrad Research Supervisor: Compliant Arm Design, Molding Deformable Tactile Sensors.

Escuela Politécnica del Ejército **Quito, Ecuador**
Research Assistant **1993-1994**

- Developed a robot capable of navigating in unknown environments; first in Ecuador.

INDUSTRY/ENTREPRENEURSHIP

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.

CRILAMYT **Quito, Ecuador**
Computer Network Administrator **1992-1993**