Curriculum Vitae

Rodolfo Cossovich

119 Mancini Way, ON K2J 5X3, Ottawa, Canada
CELL (+1) (613) 890-8792 • **E-MAIL** todocono@gmail.com • **WEB** http://todocono.github.io

PROFILE

Researcher, discovering accessible technologies

Educator, exploring impactful ways of transferring knowledge

Entrepreneur, with solid industry expertise

EDUCATION

Ph.D. in Information Technology (2023 - 2026 expected)
Creative Interactions Lab, University of Carleton, Canada

Master of Fine Arts (2020)
University of Plymouth via Transart Research Institute, United Kingdom

Electronics Engineer (2004)
Escuela Superior Técnica del Ejército, Argentina

SELECTED ACADEMIC EXPERIENCE

Carleton University (Ottawa, Jan. 2023 – present) Research Assistant, Teaching Assistant, and Contract Instructor.

OCAD University (2024) Sessional instructor.

NYU Shanghai (Shanghai, August 2020 – present) Assistant Arts Professor

NYU Shanghai (Shanghai, August 2020 – August 2015) Clinical Instructor

NYU Shanghai (Shanghai, 2014) Adjunct Instructor

Make For Kids (Shanghai, July 2012 – August 2015) Curriculum Developer

SELECTED ENTREPRENEUR EXPERIENCE

MustardTek (Shanghai, 2021 – 2023) [Link] Co-Founder & CIO. I led the research and development of the company, securing funding through the Microsoft AI4Accessibility Grant ($125k) to train people with disabilities in prototyping techniques, and co-designing their new computer input methods.

Koding Kreators (Shanghai, 2019 – 2021) [Link] Co-Founder & Education Director. I developed content for an immersive STEAM learning experience for children ages 5 to 15. Our camp programs focused on art and technology, scaled up to a team of 15 teachers with hundreds of students per summer.

Plobot (Hong Kong, 2015 – 2019) [Link] Co-Founder & CEO, leading an interdisciplinary team to develop a physical programming toy for kids ages 4+. Our novel idea of disrupting education attracted investment from MiLa Capital ($150k), Kickstarter Crowdfunding ($40k), and private funds ($350k). The company was sold to a Mr. Robo education group, now using it at 250 learning centers in Mainland China.

Multiplo LLC (U.S.A., 2012 – 2015) [Link] Co-founder and CEO, taking from concept to a prototype, to a product commercialized in 60 countries. We developed a teacher training kit that attracted crowdfunding ($130k) and received a grant from Argentina's Ministry of Education ($600k).

SELECTED INDUSTRY EXPERIENCE

RobotGroup (China-Argentina, 2010 – 2012) [Link] Asia Production Manager, coordinating the production of consumer products in China for South America.

ITR (China, 2009 – 2011) [Link] As a Web Architect, I designed back and frontends for internet products like eCommerce platforms and social networking sites. I introduced the team to open-source toolchains.

ECAMEC (Argentina, 2006 – 2008) [Link] As a Senior Designer, I led the research and development of several consumer electronic products, including power-quality instruments for transmission lines.

EOLUX - Giacobone (Argentina, 2002 – 2008) [Link] As part of the Research and Development team, I led the design and development of wind power-related products, including a programmable battery charger of 32A at 500V and a power inverter of 5kW.

CITEFA (Argentina, 1999 – 2002) [Link] As a junior researcher, I built a low-cost amplifier of high bandwidth and ultra-low noise to read LIDAR ionospheric reflections.

SELECTED ACADEMIC PUBLICATIONS

Cossovich, R., Chang, M., Fu, Z., Girouard, A. & Hodges, S. (2024). **Co-designing Accessible Computer and Smartphone Inputs Using Physical Computing.** In IEEE Pervasive Computing. [doi.org/10.1109/MPRV.2024.3418899]

Cossovich, R., Wu, S.. & Girouard, A. (2024). **"I tried everything. Nothing works": Challenges and Creative Processes from Digital Artists with ULMI.** In *Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility*. (ASSETS'24), Canada. [doi.org/10.1145/3663548.3675654]

Cossovich, R., Hodges, S., Kang, J. & Girouard, A.(2023). **Co-designing new keyboard and mouse solutions with people living with motor impairments.** In *Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility*. (ASSETS'23), New York, USA. [dl.acm.org/doi/10.1145/3597638.3614549]

Cossovich, R., *Oury, A., *Wang, H. & Cochrane, K. (2023). **roboVR: A Mixed Reality Simulation for Blind and Low Vision Students.** Poster presented at the 39th Graphic Interfaces (GI 23), Victoria, Canada. [Link]

*Nomoto, M., *Lustig, A., Cossovich, R., & Hargis, J. (2022). **Qilin: a Robot-Assisted Chinese Language Learning Bilingual Chatbot.** In Proceedings of the 4th International Conference on Modern Educational Technology (ICMET 2022), Macau, China. doi.org/10.1145/3543407.3543410

Roushdy, A., Cossovich, R., *Li, Y., & Hargis, J. (2022). **Realizing the importance of course design through rapid and frequent modifications in instructional modality.** *The Online Journal of New Horizons in Education-July*, *13*(3). https://www.tojsat.net/journals/tojned/articles/v13i03/v13i03-07.pdf

Cossovich, R., & Ermacora, G. (2021). **Interactive Technology Workshop as an Activity for Social-emotional Competence in a Post-pandemic Scenario.** Edulearn21 Proceedings, presented at the 13th Annual International Conference on Educational Technology in Palma de Mallorca, Spain. doi.org/10.21125/edulearn.2020.0581

Lavigne, E., Cossovich, R., & Hargis, J. (2021). **Using Design Thinking and Robots to Assess and Measure a Distance Learning After-School Program.** Global and Local Distance Education- GLOKALde, October 2021, ISSN 2148-7278, Volume: 7 Number: 2, Article 2. http://www.glokalde.com/pdf/issues/20/Article2.pdf

Cossovich, R., Hargis, J., & Chun, H. (2020). **Working with electrons: Integrating "kits" for hands-on online learning in homes.** *The Online Journal of New Horizons in Education.* www.tojned.net/journals/tojned/articles/v10i04/v10i04-05.pdf

Cossovich, R. (2020). **A Project-Based Learning Approach to Electromagnetism.** Edulearn20 Proceedings, presented at the 12th Annual International Conference on Educational Technology in Madrid, Spain. doi.org/10.21125/edulearn.2020.0581

Cossovich, R., Virgint, S., Garg, Y., Dhakar, D. & Lu, L. (2020). **Robotario: experiments in robotic agency**. Presented at the 4th International Conference of Robotics and Automation in Chengdu, China. http://dx.doi.org/10.1145/3402597.3402598

SELECTED CREATIVE PRACTICE

Cossovich, R. (2020). **The Perfect Robot.** Short film, inspired by Jørgen Leth's "The Perfect Human" (1963). Presented at "Transart: A (not-so)Short Fest." [Link]

Cossovich, R. (2019). **Enlightening Intelligence: Behaviours from Synthetic Psychology.** Poster presented at the 25th International Symposium of Electronic Arts (ISEA 2019) in Gwangju, Korea. [Link]

Cossovich, R. (2019). **Robotic Poetry.** Performance at SOMA Cultural Center, Mexico.

Cossovich, R. & Hilliard, K. (2019). **Reunion: a hybrid robot-human reflection.** Performative experiment at Toronto Metropolitan University, Canada.

Fonassi, F., Eaton, S.J., Lynch, S., Mascarenhas, W. L., Kyambi, S., Lopez, P.E., Cossovich, R., Bertorello, F. (2019). **Field Kitchen Recordings.** Sound composed and recorded at the Art Residency Field Kitchen Academy from July to August 2019 in Buchholz, Germany.

Cossovich, R. (2018). **Crypto-Karma.** Short performance about a dystopian future written and performed while being an artist in residency at Uferstudios GmbH on August 21, 2018, in Berlin, Germany.

Hilliard, K., Eaton, S.J., Lynch, S., Mascarenhas, W. L., Kyambi, S., Lopez, P. E., Cossovich, R., Bertorello, F., Busch, B., Sandoval, L. (2019). **Editing Spaces.** The Institute of Endotic Research Press. [Sample]

Cossovich, R. (2018). **Plobot: Interactive Installation.** Robot game displayed at Shenzhen Museum of Contemporary Art during Shenzhen Design Week.

Cossovich, R. (2018). **J.A.T: Just another Theremin.** Mixed media using wood, copper wires and brass nails. Various semiconductors.

CURRICULUM DEVELOPMENT

Creating Assistive Technology, 2022. This interdisciplinary project-based class focuses on the design, development, and use of technology that increases the quality of life of individuals with disabilities. Field trips to local facilities will be scheduled, and they will provide an off-campus real-world learning experience and an opportunity for students to interact with users of assistive technology in the local community. Students will participate in a team-based design project that identifies challenges for individuals with disabilities, and they will create novel and valuable assistive devices to meet their needs (Interactive Media Arts, NYU Shanghai). [Link]

Device Design, 2022. In this class, we will rethink physical interfaces and how things are designed, from the conceptual to the practical perspective. The hands-on approach of the class will require all students to develop their ideas visually, utilizing design tools to materialize concepts and ideas into functional products. We will rethink physical interfaces and device enclosures through a series of creative exercises focused on exploring the role of the design process as a nexus between the user and the devices (Co-created and co-taught with Prof. Christian Grewell at the Low Res Master of Arts, NYU). [Link]

New Interfaces for Musical Expression, 2021. In this NIME class, the focus will be on electronics, musical instruments, and live performances. Students will engage in a series of hands-on-making workshops that involve using Arduino, sensors, and the visual programming language Max. The class will culminate with live in-class student performances (Co-created and co-taught with Prof. Eric Parren at the Low Res Master of Arts, NYU). [Link]

Interface Lab, 2020. This production course will survey alternative interfaces with an emphasis on embodied interactions. Incorporating aspects of physical and tangible computing, students will be exposed to the internal machinations of systems, networks, and sensors that underlie these interfaces. (Co-created and co-taught with Prof. Christian Grewell at the Low Res Master of Arts, NYU). [Link]

Introduction to Robotics, 2017-2021. Since the beginning of civilization, people have fantasized about intelligent machines sensing and acting autonomously. In this course, students discover what robots are, learn how to design them, and use simple tools to build them (Interactive Media Arts, NYU Shanghai). [Link]

Working with Electrons, 2019-2021. This class focuses on the curiosity behind the greatest discoveries of electromagnetism. By replicating experiments with magnetic and electrical fields, students explore the major breakthroughs that enabled us to power up devices, connect people and store information (Interactive Media Arts, NYU Shanghai). [Link]

Bio-Inspired Robot Systems, 2019-2021. How do complex systems work? Can nature help us understand them? To explore answers to these questions, we will run a series of experiments that will serve as an introduction to swarm robotics, machine learning and bionics (Interactive Media Arts, NYU Shanghai). [Link]

Made in China, 2017. This course was co-created and co-taught with Christian Grewell. It takes a hands-on critical look at the history and factors shaping China's reputation as the 'workshop of the world' and also its emergence through economies of scale and scope as a hub for innovation through rapid prototyping and manufacturing (Co-created and co-taught with Prof. Christian Grewell at Interactive Media Arts, NYU Shanghai). [Link]

Animatronics, 2017. Animatronics is a multidisciplinary field which integrates anatomy, mechatronics and puppetry, resulting in lifelike animation. This course explores what factors bring devices to emulate a human or an animal, using electromechanical components and software to recreate them (Interactive Media Arts, NYU Shanghai). [Link]

Netsprings Challenge, 2016. I designed content to be used as an inclusive way to disseminate technology in rural China. After I ran the short course as a pilot, we trained teachers to spread it across 50 locations in rural China. [Link]

Plobot: A Teacher's Guide, 2016. (co-created with Eliya Lavine, Sona Maharjan and Minki Chan). A guide for instructors to use an educational robot in their classrooms. It includes an introduction to computational thinking, robotics and critical making. The age target is kindergarten to grade 2. [Sample]

How to build a robot, 2014. Instructional videos were filmed by MakerTV (创客空间), a TV Show from Shanghai Media Group that was broadcast to divulge the maker culture and popularize science and technology. [Sample 1 - Sample 2 - Sample 3]

SELECTED WORKSHOPS

Co-design for accessible computer inputs (December, 2022).
Raspberry Pi <> Arduino for robotics (October, 2021).
Arduino-Unity Interface Lab - Online Tutorials (July, 2021).
DIY Interactive Face Masks (December, 2020).
Motion Capture & Unity (November, 2020).
Drawing Robots (September, 2020).
PCB Prototyping by Freeforming Circuits (August, 2020).
Prototyping circuits (November, 2019). Workshop using LPKF prototyping machine.
Programming tiny MCUs (October, 2019). Workshop using embedded software.
Designing circuits (October, 2019). Workshop using Eagle software.
Beyond microcontrollers (March, 2018). Workshop using analog circuits.
Build circuits like a pro (April, 2018). Workshop using Eagle software.
Advanced Robot Prototyping (June, 2016). Workshop for beginners to build robots.
Javascript Marathon (June, 2016). Workshop for beginners to learn Javascript.

COMMUNITY ENGAGED LEARNING

Collaboration with Home of Hope at Songjiang Rehabilitation Clinic (2022)
New Interfaces of Musical Expression, Art Installations co-chair (2021)
Assistive Technology Hackathon, mentor at United World College (2021)
Maker Carnival organizer (2017, 2018, 2019, 2020, 2021)
“RoboMasters” Student Club Advisor (November 2019 - December 2020)
“uBotics” Student Club Advisor (October 2018 - December 2020)
Machine Art, co-organizer with Eric Parren (November, 2019)
Arduino Day, co-organizer with Marcela Godoy (March, 2019)
Rube around the world, co-organizer with Tom Igoe & Michael Shilloh (March, 2019)
Jinqiao Maker Faire organizer (2018)
HackNYU, co-organizer with Grewell (2018). Co-organizer with Saludades (2017)
Mini Hackathon mentor (December, 2018)
Shenzhen Design Week at the Museum of Contemporary Arts (December, 2018)

COMMUNITY OUTREACH

An Inclusive Cafe (Nov., 2021). Workshop to explore visual impairment and adaptive technologies at Jinqiao Public Library.
An Immersive Experience of Visual Impairment (Oct., 2021). Interactive Installation at Shanghai Maker Faire.
Programming Face Masks (Jul., 2021). Workshop at Summer Camp organized by DSS.
Making Robots: a family activity (Nov., 2020). Workshop at Shanghai Maker Faire.
Interactive Face Masks using Arduino (Nov., 2020). Workshop at Westbund Museum, Shanghai.
Interactive Face Masks using TokyMaker (July, 2020). Workshop at Bespoken Summer Camp, Shanghai.
Interactive Face Masks using ATtiny (June, 2020). Workshop at Jinan Youth Center, Shanghai.

Drawing with Robots: a family activity (August, 2020). Workshop at Changning Culture Center.
International Conference of Robotic Applications (June, 2020). Session chair. Chengdu, China [Online due to Covid19].
Wooden Arcades (October, 2019). Workshop at Storlarka, Buenos Aires.
Recycling as a form of art (2019) Jinyuan Gongyu, Changning, Shanghai
Trash Collection in Changning (2019) Jinyuan Gongyu, Changning, Shanghai.
Trash Scavenger Hunt (2019) Jinyuan Gongyu, Changning, Shanghai.
Upcycling toy cars (2019) Xinchejian, Shanghai.
Robot Art (2019) West Bund Museum, Shanghai.
Teaching in migrant villages (2017 - 2018) Saint Francis Xavier Church, Shanghai.

PUBLIC LECTURES

Future Trends in Robotics & Automation (December, 2022). Public Lecture, China Robots and Intelligent Equipment Vocational Education Group (CRVEG)
Creative Coding (September, 2022). Public Lecture, Rosso Art School (over Zoom).
Robot x Dollar (September, 2021). Public Lecture, Escuela Barragan (over Zoom).
Mentes Inquietas (July, 2021). Public Lecture, Pan American Energy (over Zoom).
Art & Science (August, 2020). Public Lecture at Tongji University, Shanghai.
Machine Art (January, 2020). Artist Talk at OCAD University, Toronto.
Robot Poetry (January, 2020). Artist Talk at SOMA Cultural Center, Mexico.
Creating Robot Art (October, 2019). Workshop at West Bund Museum, Shanghai.
Education in the digital age, overseas trends and investment opportunities (August, 2019). Seta Capital, Shanghai.
Ways that art and science need each other (June, 2019). Public lecture at Yangzhou University.
From idea to Kickstarter & back again: a journey with an innovator (May, 2019). L'université de technologie sino-européenne de l'université de Shanghai. [Link]
Leveraging Open Source and crowdfunding to reinvent the design cycle (September, 2018). Public lecture at Shanghai Science and Technology Committee.
How can designers leverage Open Source? (April, 2018). Public lecture during Shenzhen Design Week at Shenzhen Museum of Modern Art.
How does NYU Shanghai IMA reinvent education? (April, 2018). Panel discussion during the Education Exhibition at the Shanghai Exhibition Center.
Maker education around the world: what works and what doesn't? (2017). Public lecture at Wenzhou University.
Using I.O.T. devices to develop distributed robotic systems (May, 2016). Public lecture at Taipei Hackerspace, Taipei.
New techniques of digital prototyping for educational robotics (October, 2016). Public lecture at Xinchejian Hackerspace, Shanghai.
Educational robotics panorama (October, 2016). Public lecture at East China Normal University, Shanghai.
Industry, innovation and education (October, 2015). Public lecture at Escuela Superior Técnica del Ejército, Argentina.
Open source tools used in robotics (October, 2015). Public lecture at C.I.D.E.S.O. (Army's Software Research & Development Center), Argentina.

LANGUAGES

Mandarin - Intermediate
Portuguese - Beginner
Spanish - Native

PROFESSIONAL DEVELOPMENT

Course of Research Ethics [TCPS CORE 2 - Government of Canada]
Course of Accessibility for Ontarians with Disabilities Act [Carleton University]
Social & Behavioural Researcher [CITI Program - NYU **]**
Self-driving cars with Duckietown [ETH Zurich - MOOC **]**
Course design studio [Center of Teaching & Learning, NYU Shanghai **]**
Design and development of educational technology in education [MITx - MOOC **]**
Making learning visible [Harvard Graduate School of Education - MOOC **]**
Design for manufacturing [Make in LA, Los Angeles **]**
Entrepreneurship [Startup Leadership Program, Shanghai **]**
Mandarin [East China Normal University, Shanghai **]**
Digital Signal Processing [Universidad Tecnológica Nacional, Buenos Aires **]**
ISO 17025 Certification [Instituto Nacional de Tecnología Industrial, Buenos Aires **]**
Circuit Design [Centro Investigación de las Fuerzas Armadas, Buenos Aires **]**

SELECTED MEDIA MENTIONS

This tiny robot teaches kids to code using cards. (2016) The Verge, USA
An invention from Argentina to China. (2016) Clarin Digital, Argentina [Link - SP]
Makers in Shanghai. (2015) Jiefang Monday Newspaper (解放周), China [Link - CN]
Hackers let kids play with robots. (2015) Wenhui Newspaper (文匯报), China [Link CN]
Highly added-value products from Argentina: using robots in education. (2015) Dangdai Magazine, Argentina [Link - CN]
Robot building and artificial intelligence. (2015) Shanghai Urban Family, China [Link]
How to teach robots programming.(2013) A Kind Voice, radio program, USA. [Link]
Create your own robot using this Multiplo kit. (2012) Mashable, USA [Link]