ANDREA CIMOLATO

R&D Expert in Innovative Medical Devices

Entrepreneur Driving Advanced MedTech Research to the Market

ABOUT ME

With my **Ph.D. in Bioengineering**, I dedi cate my career to empower individuals with disabilities through **innovative tehcnolo gies**, merging biological systems with engineering solutions.

As an **accomplished researcher** and **co-founder of a startup** I have experience in translating groundbreaking technological research into tangible, patient-centric **medical device** solutions. My unique skill set makes me an unique chimera able to navigate both the competitive research environment and the complex **medical device industry**.

"Be curious, not judgmental." I live by this W. Whitman quote in my daily practice. It is this curiosity that drives my continuous journey of self-improvement in my job and in my personal life.

LANGUAGES

- ENGLISH — 90% — Professional level — TOEIC (440/490)
- ITALIAN — 100% — Mother Tongue
- GERMAN — 20% — Basic level
- FRENCH — 25% — Conversational level

CONTACTS

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Andrea Cimolato (click here)

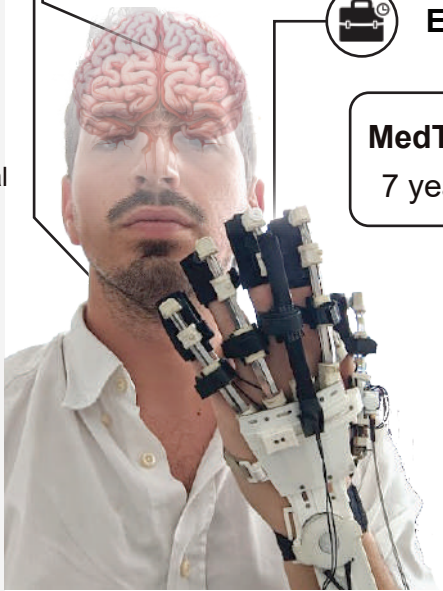
SKILLS

Loading...

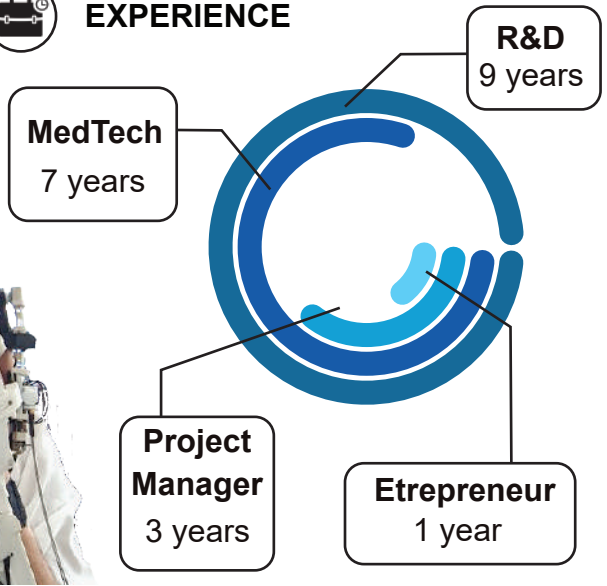
- **Problem-solving** honed through multi-year experience in engineering solutions to science-based problems — 90%
- **Management** of cutting-edge and high-stakes projects with multi-million investments — 80%
- Succeful **Leadership & Team-building** of international multidisciplinary teams by assessing their abilities and guiding their integration into project workflow — 80%
- **Verification and Validation processes** in medical devices for neurostimulation — 70%

KEY COMPETENCES

- **Multidisciplinary background** spanning from scientific research to medical product manufacturing and business concept creation
- Design, prototyping, testing and clinical validation of **medical neural technologies** with patients and animal models
- Profound **neuroscience** knowledge, data analisys, modeling, human machine interface and interaction



EXPERIENCE



EDUCATION

Business Concept Course *2022*

- CTI Business Creation, Innosuisse, Zurich

Ph.D. in Bioengineering *2017-2021*

- Politecnico di Milano, Neuroengineering and Medical Robotics Laboratory (NearLab), Milan, Italy
- Visiting doctoral student at Eidgenössische Technische Hochschule (ETH), NeuroEngineering Lab, Zürich, Switzerland

Master Degree in Bioengineering *2012-2015*

- Università degli Studi di Padova, Padova, Italy
- Visitng student at Kungliga Tekniska Högskolan (KTH), Stockholm, Sweeden

Bachelor Degree in Information Technology Engineering *2009-2012*

- Università degli Studi di Padova, Padova, Italy

PERSONAL INFORMATION

- 18 February 1990
- Single
- Nationality Italian
- Residence permit B
- Open to travel

HOBBIES

Cooking

Always searching for new flavors, my recipe book contains nearly 400 recipes ready to be shared

Podcasts

Eager listener of scientific podcasts, valuing science literacy and critical thinking as essential skills

Sports

I enjoy the ride, not the competition: sport is my way to practice mindfulness and self-respect

WORK EXPERIENCE

POST DOCTORAL RESEARCHER *Sep 2024 - Ongoing*

at Medical University of Vienna, NeuroEngineering Lab, Vienna, Austria

- Leading multiple research projects focusing on the development of neuroengineering technologies for restoring and rehabilitating sensorimotor arm impairments. Innovating telemedicine solutions for at-home rehabilitation and telemonitoring, ensuring accessibility and improved patient care.
- Managing the testing and clinical validation of research devices through robust partnerships with clinical collaborators, guaranteeing real-world impact.
- Supervision of laboratory intellectual property, grant applications, and funding, driving innovation and securing critical resources.

CO-FOUNDER & PROJECT MANAGER *Sep 2023 - Mar 2024*

at MYNERVA, Wyss Zurich, Translational Center, Zurich, Switzerland

- **Management of medical device development** from scientific projects to manufaring, ensuring regulatory compliance and supervising validation and verification for quality standards.
- **Leading of a cross-functional team** for hardware and software development, coordinating tasks and objectives between internal resources and external partners, such as manufacturers and supliers.

POST DOCTORAL RESEARCHER *Oct 2021 - Mar 2024*

at ETH, NeuroEngineering Lab, Zurich, Switzerland

- Successful **completion of seven research projects** focused on developing and clinically validating assistive, rehabilitative, and monitoring medical technologies with international collaboration (Switzerland, Germany, Serbia, Spain, Italy, and the USA).
- Ensured **effective collaboration and in multiethnic and multidisciplinary teams** across different medical and engineering background, fostering a formative and constructive environment.
- Contributed to tech transfer activities, grant applications, and patent writing, securing over **4M CHF in funding for research & development**.

RESEARCH FELLOWSHIP *Apr 2017- Jul 2021*

at IIT, Rehab Technologies INAIL Lab, Genova, Italy

- **Developement AI and data modeling technologies** for robotic control, neurostimulation prosthetics, human body motion acquisition, and biological signal processing.

SOFTWARE DEVELOPMENT ENGINEER *Sep 2015- Mar 2017*

at IAS-Lab, Università degli Studi di Padova, & EXiMotion, Padua, Italy

- **Developement of advanced human and brain-computer interfaces** for telepresence, navigation, and robotic control
- Participation of the first italian non-pharmacological pain therapy with **social robotic devices**

Mentoring

Co-advisor of 5 Ph.D. Students

Greta Preatoni, ETH Zurich
Lauren Chee, ETH Zurich
Fededrico Ciotti, ETH Zurich
Noemi Gozzi, ETH Zurich
Valerio Giuseppe Aurucci, ETH Zurich

Supervisor of 9 Master Students Thesis

Luca Brugnoli, Università di Bologna
Pietro Palopoli, ETH Zurich
Dunja Cekic, ETH Zurich
Mar Cervera-Negueruela. ETH Zurich
Margherita Rizzoli, ETH Zurich
Sara Bellomo, Politecnico di Milano
Fededrico Ciotti, ETH Zurich
Valerio Giuseppe Aurucci, ETH Zurich
Albulena Saliji, ETH Zurich
Ezra Fogle, ETH Zurich

Supervisor of 3 Bachelor Students Thesis/Intership

Lea Rotondi ETH Zurich
Michelangelo Gautschi, ETH Zurich
Pietro Palopoli, ETH Zurich

Editorial Activities

Reviewer for 9 scientific journals

- Frontiers in Neuroscience
- Frontiers in Neurorobotics
- iScience
- IEEE Robotics and Automation Letters
- Transaction on Biomedical Engineering
- Journal of Biomechanics
- Scientific Reports

Reviewer for the Agence Nationale de la Recherche

Intellectual Properties

EP/PCT patent inventor “System for producing somatotopic sensations using Transcutaneous Electrical Nerve Stimulation (TENS)

ACHIVEMENTS, GRANTS AND AWARDS

- Yung researcher scholarship awardee (Università degli Studi di Padova),
- Executive doctoral research scholarship awardee (Politecnico di Milano)
- Invited speaker at the 2020 IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob)
- Invited speaker at the Italian and Swiss presidential visit at ETH, 2021
- Co-recipient of Innovation Booster grant for university-based high-potential businesses with MY-LEG project (Innosuisse, 2022)
- Business concept class award (among other 20 start-ups) for NeuroBlink project (CTI Business Creation, Innosuisse, 2022)
- IRP post-doc research grant recipient (International Foundation for Research in Paraplegia, 2023)
- Co-founder of MYNERVA start-up, awarded with 3.8 MCHF accelerator grant (Wyss Zurich, Translational Center, 2023)
- Co-recipient of Proof-of-Concept ERC research grant (European Union, 2023)

PUBBLICATIONS

Google Scholar Profile

9 peered review journal papers, 4 peer-reviewed conferences papers/extended abstract, 1 book chapter

Cimolato, A., Raspopovic, S. (2024). Closing the sensory feedback loop is necessary for effective neurorehabilitation. PLOS biology.

Ciotti, F., John, R., Secerovic, N., Gozzi, N., **Cimolato, A.**, Jayaprakash, n., Song, W., Toth, V., Zanos, T., Zanos, S., Raspopovic, S. (2024). Towards enhanced functionality of vagus neuroprostheses through in silico optimized stimulation. Natue Communications.

Cervera-Negueruela, M., Chee, L., **Cimolato, A.**, Valle, G., Tschopp, M., Menke, M., Papazoglou, A., Raspopovic, S. (2024). Bionic blink improves real-time eye closure in unilateral facial paralysis. Journal of Neural Engineering.

Ciotti, F., **Cimolato, A.**, Valle, G. and Raspopovic, S., 2023. Design of an adaptable intrafascicular electrode (AIR) for selective nerve stimulation by model-based optimization. PLOS Computational Biology.

Cimolato, A., Ciotti, F., Kljajic, J., Valle, G. & Raspopovic, S. (2023). Symbiotic electroneural and musculoskeletal framework to encode proprioception via neurostimulation: ProprioStim. iScience.

Cimolato, A., Driessen, J. J., Mattos, L. S., De Momi, E., Laffranchi, M., & De Michieli, L. (2022). EMG-driven control in lower limb prostheses: a topic-based systematic review. Journal of NeuroEngineering and Rehabilitation, 19(1), 1-26.

Valle, G., Saliji, A., Fogle, E., **Cimolato, A.**, Petrini, F. M., & Raspopovic, S. (2021). Mechanisms of neuro-robotic prosthesis operation in leg amputees. Science Advances, 7(17), eabd8354.

Cimolato, A., Katic, N., & Raspopovic, S. (2021). Modern approaches signal processing for bidirectional neural interfaces. Somatosensory Feedback for Neuroprosthetics, Chapter 20 (pp. 631-659). Academic Press.

Cimolato, A., Milandri, G., Mattos, L. S., De Momi, E., Laffranchi, M., & De Michieli, L. (2020). Hybrid Machine Learning-Neuromusculoskeletal Modeling for Control of Lower Limb Prosthetics. In 2020 8th IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob) (pp. 557-563). IEEE.

Cimolato, A., Raspopovic, S., Panarese, A., Vallone, F., Del Valle, J., Micera, S., & Navarro, X. (2020). Neural signal recording and processing in somatic neuroprosthetic applications. A review. Journal of neuroscience methods, 337, 108653.

Beraldo, G., Antonello, M., **Cimolato, A.**, Menegatti, E., & Tonin, L. (2018, May). Brain-Computer Interface meets ROS: A robotic approach to mentally drive telepresence robots. In 2018 IEEE International Conference on Robotics and Automation (ICRA) (pp. 4459-4464). IEEE.

Tonin, L., **Cimolato, A.**, & Menegatti, E. (2017). Do not move! entropy driven detection of intentional non-control during online smr-bci operations. In Converging Clinical and Engineering Research on Neurorehabilitation II (pp. 989-993). Springer, Cham.

Cimolato, A., Piovanelli, E., Bortoletto, R., Menegatti, E., & Pagello, E. (2016, December). Muscle synergies for reliable NAO arm motion control: an online simulation with real-time constraints. In 2016 IEEE International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAR) (pp. 191-196). IEEE.