

Vittorio Caggiano

caggiano@gmail.com

<https://vittorio-caggiano.github.io/>

Address:

444e 86st Apt 24D

10028, New York, NY (USA)

+1 (917) 573-8275

SKILL SUMMARY

Analytical Thinker: Strong problem solving and analytical skills

Leadership: Managing and directing teams of researchers, developers, designer, and project managers for R&D projects

Interpersonal Skills: Exceptional verbal and written communication skills leveraged by writing grants/ scientific publications and presentations

Technical skills: Programming Languages (Python/Matlab), Statistical Analysis, Machine learning (supervised, unsupervised, reinforcement-learning), Recording Techniques and Signal processing (Intracortical, EEG, ECoG, EMG, fMRI)

EDUCATION AND TRAINING

MicroMBA, IBM Learning center, Armonk, US 2017

Ph.D. in Natural Science, International Max Planck Research/Graduate School of Neural & Behavioural Sciences, University of Tuebingen (Germany), *summa cum laude* 2010

Leadership, Time & Conflict management - International Max Planck Research School 2009

Graduate School in Computer and Systems Engineering, University of Naples "Federico II" Napoli, Italy 2004 – 2006

Certification as Professional Engineer (Italy) 2004

B.S./M.S. in Electronic Engineering, University of Salerno, Italy, *summa cum laude* 1998 – 2004

EXPERIENCE

Co-Founder, MyoLab, USA 2023-present

Technical Program Manager (TPM) & Researcher, Meta AI Research, USA 2020-2023

- **TPM:** Definition and management of AI programs at scale ([FairScale](#), [xFormers](#)) and computer vision methods to learn visual representations from videos taken from an egocentric perspective

- **Research:** Modelling & Learning complex skilled actions in bio-mechanical systems ([MyoSuite](#)) 2019-2020

Sr Manager and Program Director, Emergence Technology Experiences, IBM Research, USA

- Leading a large team (>30pp) of Developers, Designers, and Project Managers to identify and accelerate IBM Research technologies out of the laboratory and into the world.

- MVPs, demos, and in-person/[digital experiences](#) on IBM research results in AI and Quantum

- Community and opensource e.g. [CLAI](#), [Covid19-HPC-consortium](#), [FHE](#), [VSRL](#)

Global Technology Outlook (GTO), IBM Research, USA 2018-2019

- **Co-Leading** the annual analysis to identify technology trends and disruptive technologies to create new opportunities, and to add new business value for IBM

Research Staff Member, Computational Biology Center, IBM Research, USA 2016-2020

- **Team Lead** of the Multiscale NeuroKinematic Group:

- Computational models of central and peripheral motor systems to control movements

- Lead [collaboration with Pfizer](#) to analyze motor signatures of disease progression in Parkinson's patients by means of wearables

Postdoctoral Fellow, Karolinska Institutet, Stockholm, Sweden, MIT, Cambridge, MA, USA, Hertie-Institute for clinical brain research, Tuebingen, Germany 2010-2016

- Electrical, optical, pharmacological and genetic methods for controlling cortical, subcortical and spinal neural circuits for movement generation

- Acquisition, management and statistical analysis of cortical (intracortical) and peripheral (EMGs) signals for movement generation and sensory perception

- Acquisition, and statistical/machine learning analysis of electrophysiological signals (intracortical, fMRI, EEG/ECoG signals for rehabilitation of stroke patients

LANGUAGES

Italian (mother-tongue), **English** (fluent written/spoken),
German (basic written/spoken), **Spanish** (basic written/spoken)

EVENT ORGANIZATION

2024 Workshops at BIOROB & ICRA - [Expanding Frontiers of Sim2Real: Robotics, biomechanics,... and beyond](#).

2023 NeurIPS MyoChallenge – [Towards Human-Level Dexterity and Agility](#)

[MyoSymposium](#) @ NeurIPS

Workshops at ICRA – [Neuromechanics meets deep learning](#)

2022 [MyoSymposium](#) at NeurIPS

NeurIPS MyoChallenge – [Learning Physiological Dexterity](#)

AWARDS & HONORS

- [MyoChallenge Podcast](#), 2023
- Person of the Month – Focus Magazine (Italian) 2013
- Human Frontier Science Program - Long-Term Fellowships 2011-2014
- Foerderpreis, Deutsches Primatenzentrum Göttingen (DPZ), Goettingen (Germany) 2010
- Attempto Prize, University of Tuebingen (Germany) 2010
- Best graduate student paper presentation in the field of Motor Control IGS 2005

GRANTS

- "Israel Society for Neuroscience" 25-27 November 2007 Eilat, *Israel from Bundesministerium für Bildung und Forschung (BMBF)*
- "SfN meeting" 2009 Chicago, USA from *Federation of European Neuroscience Societies (FENS)*
- The McGovern Institute Neurotechnology (MINT) program. (PIs: P. Anikeeva & E. Bizzi) Role: writing the grant; (2012-2014)

REVIEWER

eLife, Philosophical Transactions B, Scientific Reports, Journal of Neurophys., Experimental Brain Research, Cerebral Cortex, Frontiers in System Neurosc., Journal of Neurosc., NeuroImage, Social Cognitive & Affective Neurosc., Clinical Neurophys.

SELECTED PEER-REVIEWED PUBLICATIONS (9 OF 45) | TOTAL IMPACT FACTOR > 300 | IMPACT FACTOR (FIRST/LAST) > 200 (SSE [GOOGLE SCHOLAR](#))

Caggiano V., et al. MyoDex: A Generalizable Prior for Dexterous Manipulation, *ICML*, 2023

Berg C., **Caggiano V.***, Kumar V.* Generalization of Physiological Dexterity via Synergistic Action Representation, *RSS*, 2023

Wang H.*, **Caggiano V.***, et al. Myosim: Fast and physiologically realistic mujoco models for musculoskeletal and exoskeletal studies. In 2022 IEEE international conference on robotics and automation (*ICRA*). IEEE, 2022.

Agurto C, ..., **Caggiano V**, Parkinson's disease medication state and severity assessment based on coordination during walking, *PLOS One* 16 (2), e0244842, 2021

Abrami A, ..., **Caggiano V.**, Using an unbiased symbolic movement representation to characterize Parkinson's disease states, *Scientific Reports*, 2020

Caggiano V*, Leiras R* et al, Midbrain circuits that set locomotor speed and gait selection, *Nature*, 2018

Caggiano V*, Fleischer F*, Pomper J*, Giese MA, Thier P, Neural encoding of action-related causality in mirror neurons in monkey premotor area F5, *Current Biology*, 2016

Bouvier J*, **Caggiano V***, et al, Descending command neurons in the brainstem that halt locomotion, *Cell*, 2015

Caggiano V*, Pomper JK*, et al, Mirror neurons in monkey area F5 do not adapt to the observation of repeated actions, *Nature Communications*, 2013

HOBBIES AND ARTISTIC SKILLS

Scuba diving (CPR and Emergency Management), cinema, martial arts (MMA, BJJ, muay thai, karate, kick boxing), skiing, biking, traveling, playing guitar