Vittorio Caggiano

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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 & TRAINING

MicroMBA, IBM Learning center, Armonk, US — *2017*

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

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

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

Certification as Professional Engineer (Italy) — *2004*

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

EXPERIENCE

Technical Program Manager (TPM) & Researcher, *Meta AI Research, USA* — 2020-present

- *TPM*: Definition and management of AI programs at scale (FairScale, xFormers) and computer vision methods to learn visual representation from videos taken in an egocentric perspective.
- *Research*: Modelling & Learning complex skilled actions in bio-mechanical systems (MyoSuite)

Sr Manager and Program Director, Emergence Technology Experiences, *IBM Research, USA* — 2019-2020

- 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.
  - Create pipelines of innovations based on MVPs, demos, and in-person/digital experiences based on the best IBM research results in AI, Quantum, Analog-AI.
  - 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 a small data-science team in a project in collaboration with Pfizer to analyze motor signatures of disease progression in Parkinson's patients by means of wearables

Postdoctoral Fellow, *Karolinska Institutet, Stockholm, Sweden* — 2014-2016

- Design of electrical, optical, pharmacological and genetic methods for controlling cortical and spinal neural circuits for movement generation

Postdoctoral Associate/Fellow, *MIT, Cambridge, MA, USA* — 2010-2014

- Acquisition, management and statistical analysis of cortical (intracortical) and peripheral (EMGs) signals for movement generation and sensory perception
- Design of Electrical and Optical stimulation methods for studying cortical and spinal neural circuits for movement generation

Postdoctoral Associate, *Hertie-Institute for clinical brain research, Tuebingen, Germany* — 2009

- Acquisition, and statistical/machine learning analysis 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)

INVITED TALKS

2021 University of Ancona (Ancona, *Italy*)

2020 University of Tuebingen (Tuebingen, *Germany*)

2018 Drexel University (Philadelphia, *USA*)

2008-2016 NYU School of Medicine (New York, *USA*), IBM - Watson Research Center (New York, *USA*), Karolinska Institute (Stockholm, *Sweden*), SfN (Chicago, *USA*), UMG (Goettingen, *Germany*), DZNE (Bonn, *Germany*), DFG (Bonn, *Germany*), Northeastern University (Boston, *USA*), Workshop on Action, Vision and Language (Los Angeles, *USA*), Karolinska Institutet (Stockholm, *Sweden*), German Primate Center (Goettingen, *Germany*), Cajal Institute (Madrid, *Spain*), University of Navarra (x3)(Pamplona, *Spain*), University 'La Sapienza' (Rome, *Italy*), EPFL (Lousanne, *Switzerland*), University of Tuebingen (Tuebingen, *Germany*), University of Goettingen (Goettingen, *Germany*), University of Tuebingen (Tuebingen, *Germany*), Caltech (Pasadena, *USA*), MIT-CBCL (Boston, *USA*), York University (Toronto, *Canada*), University of Naples 'Federico II' (Napoli, *Italy*), University of Salerno (Salerno, *Italy*)

AWARDS & HONORS

- 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

- "Istrael Society for Neuroscience" 25-27 November 2007 Eilat, *Israel from Bundesministerium für Bildung und Forshung (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 Neurophysiology, Experimental Brain Research, Cerebral Cortex, Frontiers in System Neuroscience, Journal of Neuroscience, NeuroImage, Social Cognitive & Affective Neuroscience, Clinical Neurophysiology, Neuroscience

SELECTED PEER-REVIEWED PUBLICATIONS (7 OF 39) | IMPACT FACTOR 283 | IMPACT FACTOR (FIRST/LAST) 205

Caggiano V.*, et al. MyoSuite: A contact-rich simulation suite for musculoskeletal motor control, ***L4DC***, 2022

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, travelling, playing guitar