Dr. Andrea Casella

PRESENT POSITIONS

Founder & Chief Executive Officer at GOALMIND S.r.l. (from 2025 to date).
GOALMIND proposes to revolutionize sports training by devising innovative cognitive-motor training software, exploiting advanced virtual reality (VR) and mixed reality (XR) technologies. Based on established scientific evidence, our goal is to optimize the brain functions crucial for sports performance, accelerating improvement time and maximizing athletes' potential.
Main responsibilities and achievements:

- Scientific design and validation of dual-task cognitive-motor training scenarios in VR.
- Coordination and monitoring of the IT development team.
- Training and supervision of sports psychologists involved in the dissemination and application of the product.
- Management and organisation of networking with athletic training centres and sports federations.

Research Collaborator at the Research Laboratory of Cognitive and Action Neuroscience, University of Rome Foro Italico (from 2025 to date):
Planning, monitoring, collection and data analysis activities in the context of dual-task cognitive-motor workouts under the project PRO-BEN LAZIO1, entitled “Wellbeing and Assistance for Valuable Education (WAVE).”
Main responsibilities and achievements:

- In-depth analysis of scientific literature on dual-task cognitive motor training
- Planning and design of specific dual-task cognitive motor training sessions using innovative equipment (Witty·SEM Microgate, Gyko Pro)
- Preliminary analysis of electroencephalographic, behavioural, psychological and cognitive data.

Sport Psychologist, SS Romulea competitive categories (2022 - to date)
Main responsibilities and achievements:

- Mental Preparation for Competitive Categories and Coach.
- Cognitive-Motor Training in Virtual Reality.

Sport Psychologist, Integrated Football Academy, AS Roma & AS Roma Cares (2021 - to date).
Motor training, focused on the game of soccer, with individuals with intellectual disabilities.

Main responsibilities and achievements:

- Conducting motor skills training and psychological preparation sessions focused on football.
- Participation in a multidisciplinary team composed of speech therapists, psychologists, sports physicians and athletic trainers, with constant collaboration and sharing of objectives.
- Promotion of athletes' mental and physical well-being through personalised programmes and group activities.

EDUCATION AND TRAINING

PhD in Cognitive and Action Neuroscience, University of Rome Foro Italico (2022 - 2025).
Development and scientific validation of innovative cognitive- motor training methodologies for professional athletes via virtual reality.
Analysis of neural correlates underlying human movement and actions
Main responsibilities and achievements:

- Analysis of scientific literature on dual-task cognitive-motor training.
- Study and analysis of the use of the Witty·SEM Microgate cognitive-motor training system.
- Study and analysis of literature on the use of virtual reality in the context of sports performance and dual-task cognitive-motor training.
- Improvement of electroencephalography techniques and event-related potentials.
- Acquisition of techniques for analyzing electroencephalographic, behavioral, psychological and cognitive data.
- Acquisition and understanding of the use of STATISTICA, Brain Analyzer and Corel Draw software.
- Improvement in teamwork skills, goal-oriented work, and multitasking
- Joint opening with the laboratory tutor of an innovative line of research focused on dual-task cognitive motor training and virtual reality.
- Speaker at a seminar for master's students at the University of Rome ‘Foro Italico’ entitled Enhancing Cognitive Function and Motor Skills in Competitive Athletes through Specific Cognitive Motor Training in Virtual Reality
- Speaker at a seminar for students enrolled in a three-year degree course at the University of

Rome 'Foro Italico' entitled The influence of specific cognitive-motor training with virtual reality on the executive functions of competitive athletes and identification of the related neural bases.

Internship at Research Laboratory of Cognitive and Action Neuroscience, University of Foro Italico, Rome. (2021-2022)
Applied research experience in the field of cognitive skills enhancement, with direct responsibility for the development of a scientific project.
Main responsibilities and achievements:

- Acquisition of electroencephalography techniques and analysis of event-related potentials.
- Activation and management of a collaboration with Polisportiva Giovanni Castello for the implementation of the experimental protocol.

Master's degree in Psychology, University of Rome "Europea" (2021-2022).
Grade 110/110 cum laude. Thesis title: "The influence of soccer play on executive functions: a systematic review of the literature."

Bachelor's Degree in Psychological Science and Techniques, University of Rome "Europea" (2019-2021).
Grade 110/110 cum laude. Thesis title: "The contribution of sport in achieving human excellence."

Internship at the sport society "Polisportiva Giovanni Castello" (2020).

- Study and analysis of cognitive training techniques in football.
- Planning dual-task cognitive motor training sessions in synergy with staff.

Internship at Studio di Psicologia e Psicoterapia Gaudium. (2018).

- Study and analysis of cognitive training techniques in football.
- Planning dual-task cognitive motor training sessions in synergy with staff.

Masterclass in Digital Psychology, Idego,

Universty of Lusofòna Porto, Portugal..(March 2023 January 2024),
Course of Psychological Training and Mental Health in Sports,

Master in 'Sport Psychology', University Centre International (CUI) Rome. (March 2022, January 2032).
Study of principles and models of applied neuroscience in high performance.

SCIENTIFIC PUBLICATIONS

1. Casella, A., Ventura, E., & Di Russo, F. (2022). The Influence of a Specific Cognitive-Motor Training Protocol on Planning Abilities and Visual Search in Young Soccer Players. Brain sciences, 12(12), 1624. https://doi.org/10.3390/brainsci12121624
2. Casella, A., Di Bello, B., Aydin, M., Lucia, S., Russo, F. D., & Pitzalis, S. (2024). Modulation of anticipatory brain activity as a function of action complexity. Biological psychology, 193, 108959 https://doi.org/10.1016/j.biopsycho.2024.108959
3. Aydin, M., Lucia, S., Casella, A., Di Bello, B., & Di Russo, F. (2024). Bayesian interpretation of the prefrontal P2 ERP component based on stimulus/response mapping uncertainty. International journal of psychophysiology, 199, 112337. https://doi.org/10.1016/j.ijpsycho.2024.112337
4. Casella, A., Panacci, C., Aydin, M., Lucia, S., Di Bello, B., & Di Russo, F. (2024). Effects of a Virtual Reality Reaction Training Protocol on Physical and Cognitive Skills of Young Adults and Their Neural Correlates: A Randomized Controlled Trial Study. Brain sciences, 14(7), 663. https://doi.org/10.3390/brainsci14070663
5. Di Bello, B., Casella, A., Aydin, M., Lucia, S., Di Russo, F. D.,& Pitzalis, S. (2024). Electrophysiological indexes of the cognitive-motor trade-off associated with motor response complexity in a cognitive task. NeuroImage, 120931.https://doi.org/10.1016/j.neuroimage.2024.120931.
6. Casella, A., Panacci, C., Aydin, M., Boccacci, L., Lodi, G., Greenhough, B., Parsons, M., & Di Russo, F. (2025). Effects of virtual reality-based training for soccer players on anticipatory brain functions and cognitive skills. Authorea. https://doi.org/10.22541/au175715482.21225896/v1
7. Casella, A., Gasparotti, C., Panacci, C., Boccacci, L., Filosa, M., Aydin, M., Ferrulli, N., Sciaretta, S., Di Bello, B., & Di Russo, F. (2025). Identifying electrophysiological signatures of proactive and reactive cognitive brain processing of professional dancers. Research Square.
8. Di Bello, B., Panacci, C., Montesano, S., Costanzo, R., Boccacci, L., Aydin, M., Casella, A., Lucia, S., Strappini, F., Di Russo, F., & Pitzalis, S. (2025). Effects of Walking on Anticipatory Brain Processing During a Concurrent Cognitive Task. Psychophysiology, 62(5), e70063. https://doi.org/10.1111/psyp.70063

CONFERENCE PARTICIPATION

- Speaker in AIP Experimental 2025, 31st Annual Congress, Sharper minds, Smarter athletes: the

Cognitive Side of Sports. The influence of a soccer-based cognitive-motor dual task training in virtual reality on cognitive performance and related brain processing.

- Poster in SIPF National Congress 2025, The Adaptive Brain. The effect of sport-specific cognitive-motor dual-task training in virtual reality for soccer players on cognitive. performance and related brain processing.
- Poster in XXXII Predictive Brain SIPF National Congress 2024. Effects of a Virtual Reality Reaction Training Protocol on Physical and Cognitive Skills of Young Adults and Their Neural Correlates: A Randomized Controlled Trial Study.

TEACHING EXPERIENCE

- Speaker at a seminar for master's students at the University of Rome 'Foro Italico' entitled Enhancing Cognitive Function and Motor Skills in Competitive Athletes through Specific Cognitive Motor Training in Virtual Reality.
- Speaker at a seminar for students enrolled in a three-year degree course at the University of Rome 'Foro Italico' entitled The influence of specific cognitive-motor training with virtual reality on the executive functions of competitive athletes and identification of the related neural bases.

COMPUTER SKILLS

Excellent knowledge of EEG and ERP data analysis software, BrainVision Analyzer.
Excellent knowledge of statistical analysis software, STATISTICA.
Excellent knowledge of Meta and HTC virtual reality systems. Perfect knowledge of Office package and iOS

LANGUAGE SKILLS

ITALIAN: mother tongue ENGLISH: B2