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Matteo Ceradini

ABOUT ME

I am an Italian **computer scientist** and sports enthusiast with a **curious** and **driven mindset**. My passion for the digital world led me to study computer science and later to pursue research in **brain-computer interfaces** field, aiming to restore motor function in people with disabilities through neural-controlled technologies.

CAREER OBJECTIVE

Aspiring **AI engineer** seeking to apply the theoretical and practical expertise on **deep learning** and **data analysis** gained through **academic studies**, **work,** and **research experience**.

SKILLS

AI engineering
(deep-learning & transformers)

AI-driven neural engineering
(deep-learning & machine-learning)

Electrophysiological data analysis
(like EEG, and EMG)

Web developing

TECH STACK

Python, Matlab, C#, PhP, JavaScript

Pytorch

Codeigniter, Laravel, ReactJS

MongoDB, MySQL

Unity 3D, Illustrator

Docker, GitHub

EDUCATION

Oct 2021 - estimate Dec 2025
Sant'Anna School of Advanced Studies
PhD in Biorobotics (Translational Neural Engineering Lab)
Main research:
- Non-invasive brain and body machine interfaces (BMI) for neuroprosthetics applications.
- Immersive-virtual reality application for BMI user training.

Oct 2018 - Apr 2021
University of Torino
MSc. Computer Science (spec. Artificial Intelligence)
Grade: 110/110 with honors and distinction
Thesis: Porting of DeepLabCut, a neural network for animal pose estimation, to an embedded system for real-time acquisition

Oct 2015 - Sep 2018
University of Padova
BSc. Computer Science
Grade: 103/110
Thesis: Spam email classification using neural networks

LANGUAGES

ITALIAN: Mother tongue
ENGLISH: Fluent (C1 level)

AWARDS

October 2023
Best paper presented by a young researcher
IEEE MetroXRAINE 2023 Conference

CONTACTS

OTHER SIGNIFICANT ACHIEVEMENTS

July 2024
Zegna Scholarship fellowship
Recipient of the prestigious **Zegna Scholarship**, which founded my **8-month** research stay at the **University of Michigan** (USA), supporting advanced work in Brain and Body Machine Interfaces (BMI) with inplantable signal sources for neuroprostetics applications.

Last update: July 2025

EXPERIENCES

Oct 2021 - Oct 2025

PhD in Biorobotics - Sant'Anna School of Advanced Studies

Working on the development of Brain and Body Machine interfaces (using brain or muscle neural signals) for neuroprosthetics applications on Spinal Cord Injury patient target.

Jul 2024 - Feb 2025

Visiting PhD - University of Michigan (Biomedical Engineering)

Visiting research period in the Cortical Neural Prosthetics Lab where I worked on the development of Brain and Body Machine interfaces with implantable signal sources from Non-human primates for neuroprosthetics applications.

May 2021 - Sep 2021

AI engineer - Cynexo & SISSA

In collaboration with the Time Percepetion Lab at SISSA research center, I contributed to two main projects. The first involved implementing DeepLabCut for real-time tracking and behavioral classification of mice in neuroscientific experiments. The second focused on developing a proof-of-concept closed-loop system integrating deep learning models for real-time EEG signal decoding and Transcranial Magnetic Stimulation (TMS) control.

Sep 2020 - Mar 2021

Internship for master thesis - Cynexo & SISSA

I conducted my master's thesis in collaboration with the startup Cynexo and the Visual Neuroscience Lab at SISSA. The project involved porting the DeepLabCut neural network for animal pose estimation onto an embedded platform. I researched and implemented several deployment strategies to optimize model performance, and developed a real-time application to extract pose data from live video input. [Thesis available here:bit.ly/39LngwC]

Jun 2016 - Sep 2020

Web developer - Tecnobit

From 2016 to 2020, while completing my bachelor's and master's degrees, I worked part-time as a full-stack web developer. My responsibilities included both front-end and back-end tasks, using PhP frameworks such as Codeigniter and Laravel. During this time, I maintained and developed websites such as sketchupitalia.it, corsigeometri.it, topgeometri.it, and gstarcad.it.

SKILLS GAINED

- Neural signal analysis
- Design and training of deep learning models
- Neural signal analysis and decoding
- Development of games using immersive virtual reality
- Scientific communication (verbal and written)
- Patients interaction
- Project planning and time management

- Deep understanding of Transformers network and other deep learning methods for decoding
- Hands-on experience working with non-human primate models
- Exposure to collaborative research in an international, high-impact U.S. laboratory environment

- Neural (EEG) signal analysis and decoding with deep learning
- Integration of AI models into experimental neuroscience pipelines
- Real-time system development for closed-loop neurotechnologies
- Containerized deployment of applications using Docker

- Animal pose estimation with deep learning
- Deployment of deep learning models on embedded systems
- Technical communication and collaboration with industry and academic partners

- Front-end design and implementation
- Back-end development and database integration
- Independent project management and development
- Client communication and requirement gathering

PUBLICATIONS

The Effect of User Learning for Online EEG Decoding of Upper-Limb Movement Intention

Ceradini et. al. 2025

IEEE Transactions on Medical Robotics and Bionics

A Virtual Reality-Based Protocol to Determine the Preferred Control Strategy for Hand Neuroprostheses in People With Paralysis

Losanno*, Ceradini* et. al. 2024

IEEE Transactions on Neural Systems and Rehabilitation Engineering

Immersive VR for upper-extremity rehabilitation in patients with neurological disorders: a scoping review

Ceradini et. al. 2024

Journal of NeuroEngineering and Rehabilitation

OTHER EXPERIENCES

Jul 2018 - Ago 2018

Intership for bachelor thesis - Zextras

Two-month internship at Zextras during my bachelor's thesis. I conducted research to test the effectiveness of a spam filter using deep learning, successfully implementing a functioning prototype with high accurate rate in spam detection.

[Thesis available here (in italian): bit.ly/2IpiyZo]

Jun-Sep 2013 and Jun-Sep 2014

Summer internships

Summer internships at Margraf Project and Industrie Metalpress (2013–2014). At Margraf, I worked as a marble operator on polishing and finishing tasks. At Metalpress, I worked on the company intranet and developed a C#/.NET application for network activity monitoring via SNMP.