Edoardo D'Anna

Research Scientist
and
Engineer

Personal Profile

I am a scientist and engineer with deep expertise in neural and biomedical engineering. My core competencies are neural interfaces, scientific research, biomedical sensors, software, machine learning, data analysis, clinical studies and people management.

I am passionate about the blossoming field of health technologies: I believe that it has the potential to dramatically alter the course of history over the next few decades. The work happening today is setting the stage for increasingly symbiotic relationships between our physical and digital realities, eventually blurring the distinction altogether.

Education

2018–2014
PhD in Neuroengineering, Electrical Engineering
Ecole polytechnique fédérale de Lausanne (EPFL), Switzerland

2014–2012
Master in Bioengineering
Ecole polytechnique fédérale de Lausanne (EPFL), Switzerland

2009–2012
Bachelor in Life Sciences and Technology
Ecole polytechnique fédérale de Lausanne (EPFL), Switzerland

2008–2005
Scientific Baccalauréat
French School, Cape Town, South Africa

Languages

Language	Level	
English	fluent	●●●●●
French	fluent	●●●●●
Italian	fluent	●●●●●
German	B1	●●●○○
Spanish	A2	●●○○○

Skills

Brain-computer interfaces · Health sensors · Machine learning · Python · C++ · MATLAB · Signal processing · Real-time · Data Analysis · Team management · Neural engineering · Javascript · MEAN stack · PHP · Git · JIRA · Project management · Research · Writing

Professional Experience

Now 2023
Senior Signal Processing Engineer, Science team
Ōura, San Diego, USA
I develop new health sensing algorithms to provide users with new insights into their health.

2023–2021
Engineering Team Lead, real-time
Kernel, Los Angeles, USA
I led the team responsible for real-time time algorithms and applications for our non-invasive optical brain imaging device. We built applications in mental health, brain performance and more.

2021
6 months
Data Scientist
Kernel, Los Angeles, USA
Rapidly research, implement, validate, and extend signal processing, machine learning and analysis algorithms and techniques from the relevant literature to design brain biomarkers.

2021–2019
Postdoctoral Researcher
Rehab Neural Engineering Labs, Pittsburgh, USA
As a scientist at one of the world's leading centers for neural engineering research in humans, my responsibilities included designing, planning and executing scientific experiments in two participants with brain implants (micro-electrode arrays).

2019
10 months
Senior Biomedical Researcher, Digital Health Team
Magic Leap, Switzerland
Applied biomedical research and analysis of user data: preliminary data collection, data analysis, researching clinical data extraction and classification methods, and evaluating sensors for translational medicine applications.

2018–2014
Research Scientist (PhD candidate)
EPFL, Switzerland
I developed novel sensory feedback approaches to restore touch in upper-limb amputees. I worked with over ten patients (clinical work in Switzerland, Italy, and Serbia), delivering tangible improvements in quality of life. My research was published in high impact scientific journals (*Science Robotics*, *Neuron*) and garnered international media coverage.

2018–2015
Co-founder, Project Lead and Full Stack Developer
Alpine Studios, Lausanne, Switzerland
Created a web development studio serving approximately ten clients per year in France & Switzerland. Developed custom web apps for family businesses and national organizations.

2017–2012
Co-founder, Data Science, Hardware and Software
Blink Technologies, Lausanne, Switzerland
Co-founded a VR startup. Developed a headset add-on capable of detecting facial expressions using machine learning (muscle data and pressure). Won a startup prize and funding.

2013
3 months
Engineering Intern
RIKEN, Tokyo, Japan
Assisted a team of international scientists by creating tools and visuals for disseminating their work.

2014–2010
Teaching Assistant
Physics and informatics classes, EPFL, Switzerland
Teaching assistant in computer science and physics. Supervised learning sessions, evaluated written and oral exams.

Los Angeles, USA
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Technical Profile And Skills

- Outstanding programming skills (Python, C++ and more)
- Excellent command of neural engineering techniques, including neural stimulation and recording
- Extensive experience with clinical trials (worked with over 15 amputees and spinal cord injured participants)
- Excellent knowledge of (bio) signal acquisition and processing, data analysis and machine learning
- Extensive experience managing people (supervised a total of 14 people in academia and 2 in industry)
- Deep knowledge of the broader field of biomedical engineering and health technologies

Honors And Awards

2021 — **Ambizione Grant, Swiss National Science Foundation, approx. $1,000,000** *(turned down)*
Highly selective grant awarded by the Swiss National Science Foundation to young researchers who wish to conduct, manage and lead an independent project at a Swiss higher education institution.

2021 — **Misha Mahowald Prize for Neuromorphic Engineering**
Awarded for the project described in our team's 2018 Neuron publication.

2020 — **Best PhD paper award, NCCR Robotics**
Awarded by the Swiss National Centre of Competence in Research (NCCR) Robotics for my paper: "A closed-loop hand prosthesis with simultaneous intraneural tactile and position feedback."

2019 — **Early-Postdoc Fellowship, Swiss National Science Foundation, approx. $120,000**
Awarded starting January 2020 to pursue a postdoctoral research project at the University of Pittsburgh, USA

2018 — **Best PhD thesis award nomination**
Nominated for the best PhD thesis award in the Electrical Engineering Doctoral School, EPFL.

2015 — **Startup competition prize — Concours Start Lausanne**
"Prix Pomp It Up" from the Start Lausanne startup competition. Our startup (Blink) was selected amongst 45 participating teams.

2014 — **Prix Annaheim-Mattille de la fondation Marguerite**
Best Master Thesis in life sciences and information technology

Top 3 Scientific Publications

2019 — **Science Robotics**
A closed-loop hand prosthesis with simultaneous intraneural tactile and position feedback
E. D'Anna*, G. Valle*, A. Mazzoni, I. Strauss, F. Iberite, J. Patton, F. Petrini, S. Raspopovic, G. Granata, R. Di Iorio, M. Controzzi, C. Cipriani, T. Stieglitz, P. M. Rossini, and S. Micera

2018 — **Neuron**
Biomimetic intraneural sensory feedback enhances sensation naturalness, tactile sensitivity and manual dexterity in a bidirectional prosthesis
G. Valle, A. Mazzoni, F. Iberite, **E. D'Anna**, I. Strauss, G. Granata, M. Controzzi, F. Clemente, G. Rognini, C. Cipriani, T. Stieglitz, FM. Petrini, PM. Rossini, S. Micera

2017 — **Scientific Reports**
A somatotopic bidirectional hand prosthesis with transcutaneous electrical nerve stimulation based sensory feedback
E. D'Anna*, F. M. Petrini*, F. Artoni, I. Popovic, I. Simanić, S. Raspopovic and S. Micera

▶ A full list of publications is available here: https://scholar.google.ch/citations?user=B10ytpgAAAAJ&h

Extracurricular Activities

- **Writing**: including a blog where my most popular post was read over 60'000 times
- Outdoor enthusiast: rock climbing, skiing, surfing, camping, off-roading
- Former member of the EPFL coaching team, helping first year students with their integration
- **Go** (Japanese board game), high amateur level ~4 kyu, s in chess