



Neural engineer (PhD)
Bioengineer (MSc)

Personal Profile

I am a scientist and engineer with expert level domain knowledge in neural engineering and biomedical engineering.

I grew up in the US, Switzerland and South Africa, which gave me an open mind about the world and has made it easy for me to adapt and work with others. Organisation, efficiency and working smart have allowed me to perform highly in a world-leading university, while also pursuing my other interests, such as starting a company.

I am passionate about health technologies: I believe that we can dramatically improve human health and wellbeing through innovation and discovery.

Education

- 2018 **PhD in Neuroengineering,**
2014 **Electrical Engineering**
Ecole polytechnique fédérale de Lausanne (EPFL), Switzerland
- 2014 **Master in Bioengineering**
2012 Ecole polytechnique fédérale de Lausanne (EPFL), Switzerland
- 2009 **Bachelor in Life Sciences and**
2012 **Technology**
Ecole polytechnique fédérale de Lausanne (EPFL), Switzerland
- 2008 **Scientific Baccalauréat**
2005 French School, Cape Town, South Africa

Languages

Fluent in **English, French** and **Italian**
Intermediate **German** and **Spanish**

Professional Experience

- Now** ● **Team Lead, Real-time**
2021
Kernel, Los Angeles, USA
Leading the team responsible for developing real-time time algorithms and applications for our non-invasive optical brain imaging system.
- 2021** ● **Data Scientist**
6 months
Kernel, Los Angeles, USA
Rapidly research, implement, validate, and extend signal processing, machine learning and analysis algorithms and techniques from the relevant literature.
- 2021** ● **Postdoctoral Researcher**
2019
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** ● **Senior Biomedical Researcher, Digital Health Team**
10 months
Magic Leap, Switzerland
I was responsible for biomedical research and analysis of user data, including: preliminary data collection, data analysis, researching clinical data extraction and classification methods, and evaluating sensors for translational medicine applications.
- 2018** ● **Research Scientist (PhD candidate)**
2014
Translational Neural Engineering lab, 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** ● **Co-founder, Project Lead and Full Stack Developer**
2015
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 organisations.
- 2017** ● **Co-founder, Data Science, Hardware and Software**
2012
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** ● **Engineering Intern**
3 months
RIKEN, Tokyo, Japan
Assisted a team of international scientists by creating tools and visuals for disseminating their work.
- 2014** ● **Teaching Assistant**
2010
Physics and informatics classes (9 classes), EPFL, Switzerland
Teaching assistant in computer science and physics. Supervised learning sessions, evaluated written and oral exams.

Technical Profile

- Outstanding **programming skills** (C++, Python, MATLAB, MEAN stack, Javascript, PHP, git, JIRA, 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 **supervising** students and scientific staff (supervised a total of 14 people)
- Strong **entrepreneurial** drive and experience with startups
- 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.
- 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, F.M. Petrini, P.M. 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 sports enthusiast: **rock climbing**, skiing, surfing
- Former member of the **EPFL coaching team**, helping first year students with their integration
- **Go** (Japanese board game), high amateur level ~4 kyu