



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** ● **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 include designing, planning and executing scientific experiments in two participants with brain implants (micro-electrode arrays). This position is supported by a personal grant from the Swiss National Science Foundation.
- 2019** ● **Senior Biomedical Researcher, Digital Health Team**
10 months *Magic Leap, Switzerland*
As a Senior Biomedical Engineer, I was responsible for biomedical research and analysis of user data, including: executing data collection, preliminary studies and 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 used state-of-the-art neural engineering techniques to develop novel sensory feedback approaches for restoring touch and proprioception 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 (MEAN and PHP) and digital strategies for family businesses and large 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.
- 2014** ● **Full Stack Developer**
2011 *Jooce, web studio, Lausanne, Switzerland*
I built web solutions from the ground up for numerous clients. The projects ranged from simple websites to full featured web-apps and small social networks.
- 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

- 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