Laura Dubreuil-Vall

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SUMMARY

I am an engineer working at the intersection of data science, technology and neuroscience with 8+ years of experience in translating cutting-edge research findings into meaningful scientific products in the fields of neuromodulation, human-computer interaction and AI. As a Technical/Product Manager, I have extensive experience engaging in cross-functional collaborations with the goal of translating research into clinical products. As a Neuroscientist, I am passionate about investigating and creating new technologies that can empower individuals to take control of their health and enable doctors and researchers to make better decisions with a positive impact on society.

PROFESSIONAL EXPERIENCE

GENENTECH/ROCHE | Clinical Scientist, Neurotech Innovation Lead (San Francisco, USA)   July 2020 - Present
- Lead the identification and validation of new technologies through proof-of-concept studies, managing the required partnerships to ensure cutting-edge capabilities at the intersection of data science, technology, and healthcare.
- Ensure coordination between the design, engineering, quality management systems and data teams to inform product direction and coordinate closely with clinical and commercial to ensure the final product meets all clinical and engagement goals.

NEUROELECTRICS | Technical Manager (Boston, USA)   September 2014-July 2020
- Lead the expansion of the startup company from Spain to the US, building a new team and implementing the company's product roadmap and revenue pipeline across the US, working closely with clinical and commercial teams and leading to >50% increase in revenues.
- Lead the design and validation of key features of a medical device for EEG recording and non-invasive brain stimulation, ensuring cutting-edge capabilities at the intersection of data science, technology, and psychiatry, leading to a 10% increase in sales.

STARLAB | Research Engineer and Project Manager (Barcelona, Spain)   July 2012 - August 2014
- Worked in agile, iterative development processes to create EEG-based Brain-Computer Interfaces (BCI) for psychiatric and neurological diseases, with a focus on depression, epilepsy, dementia, stroke rehabilitation, dyscalculia and Parkinson's disease, among others.
- Managed >$1M EU-funded research projects including EEG data analysis, machine learning, non-invasive brain stimulation, brain-computer interfaces, affective computing and neuromarkers for disease at the interface of wearable hardware, modeling and AI.

ERNST & YOUNG | Life Sciences Consultant (Barcelona, Spain)   October 2011 – April 2012
- Strategic and management consulting in life sciences industries, including biotechnology, healthcare, pharma and medical devices.
- Performed strategic forecast of sales, market opportunities, competitive analysis and key stakeholders in the dialysis field.

MIT | Research Scholar (Cambridge, USA)   February 2011 - August 2011
- Designed an underwater acoustic video transmission system under the supervision of Dr. Chryssostomos Chryssostomidis.

INSTITUTE OF PHOTONIC SCIENCES (ICFO) | Intern (Barcelona, Spain)   July 2009 - September 2009
- Exploring fundamental aspects of quantum theory to enable the implementation of applications requiring specific types of quantum light.

EDUCATION

HARVARD MEDICAL SCHOOL & UNIVERSITY OF BARCELONA | PhD in Neuroscience   2015-2020
- While working full time at Neuroelectrics, I pursued a joint PhD program on the use of non-invasive brain stimulation techniques to improve executive functions, and the use of AI techniques to diagnose clinical populations and study brain dynamics.
- Designed a deep learning system based on EEG signals to predict what patients will develop Parkinson's disease 6 years in advance with 88% accuracy, with the key advantage of using feature visualization techniques that allow for biomarker discovery.
- Published 2 book chapters and more than 10 peer-reviewed publications in top-tier medical journals such as Brain Stimulation and Frontiers in Neurology. Exhaustive list of publications can be found at https://lauradubreuilvall.com/research

POLYTECHNIC UNIVERSITY OF CATALONIA | BSc, MSc in Telecommunications Engineering   2006-2011
- Ranked first student of the class out of 200 students. Courses included subjects in computer science, electrical engineering, linear algebra and physics. Awarded Everis, Caixa Manresa and Spanish National grants for academic excellence to pursue master thesis at MIT.

SELECTED PROJECTS/PUBLICATIONS

- **Dubreuil-Vall, L.** et al. *tDCS to the left DLPFC modulates cognitive and physiological correlates of executive function in a state-dependent manner.* Brain Stimulation, 2019.
- **Dubreuil-Vall, L.,** et al. *Deep learning convolutional neural networks discriminate adult ADHD from healthy individuals on the basis of event-related spectral EEG.* Frontiers in Neuroscience, 2020.
- Ruffini, G., Ibanez, D., Castellano, M., **Dubreuil-Vall, L.,** et al. Deep learning with EEG spectrograms in rapid eye movement behavior disorder. Frontiers in Neurology, 10:806, 2019.

BOOK CHAPTERS

- A. Albajes-Eizagirre, **L. Dubreuil-Vall,** et al. *Quantitative EEG for brain–computer interfaces.* In "K. Nidal and A.S. Malik, editors. EEG/ERP Analysis: Methods and Applications", chapter 7, CRC Press, 2017.
- **L. Dubreuil-Vall.** *Electroencephalography (EEG).* In "Principles of Neuroimaging. Guide to the clinic and research",* Médica Panamericana, in press.

SKILLS

- Python
- Matlab
- SQL
- R
- Tensorflow
- PyTorch
- LATEX