

Personal info

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Profile

I am a neuroscientist with an engineering background, aiming at developing innovative new tools and markers to facilitate the early diagnosis and monitoring of certain neurodegenerative diseases such as Parkinson's disease, ideally before the first motor symptoms appear. In my recent research, I have developed a new digital marker (Human Numerosity Estimation) associated with hallucinations and social deficits in Parkinson's disease patients (an early range of symptoms associated with a more severe form of the disease). My research on this digital marker has been published in high-impact, peer-reviewed journals (e.g., Nature Communications, Cerebral Cortex), has resulted in a patent (Numerosity estimation impairment measurement system (WO2024161264A1)), and has received several awards (e.g. Best Swiss Movement Disorders Paper Award 2024 by The Foundation for Research in Parkinson's and Movement Disorders).

Education & Employment

Post-doc (Swiss National Science Foundation Postdoc.Mobility) 09.2026 - 08.2028
Human Computer Integration Lab – Supervisor : Prof. Pedro Lopes
University of Chicago, Chicago, USA
Virtual Reality + Wearable to Study & Alleviate Hallucinations

Post-doc 01.2025 - 03.2025
Laboratory of Cognitive Neuroscience (LNCO) – Supervisor : Prof. Olaf Blanke
Swiss Federal Institute of Technology (EPFL), Geneva-Lausanne, Switzerland
Visuo-vestibular mismatch detection with vestibular platforms - Real-time control of a human centrifuge

PhD student & research assistant 04.2020 - 12.2024
Laboratory of Cognitive Neuroscience (LNCO) – Supervisor : Prof. Olaf Blanke
Swiss Federal Institute of Technology (EPFL), Geneva-Lausanne, Switzerland
PhD thesis: Sensorimotor and social mechanisms of hallucinations in healthy participants and patients with Parkinson's Disease
- Management of my doctoral project
- Development of a new digital marker associated with the development of a more critical form of Parkinson's disease
- Development of an online experimentation platform
- Behavioral and neuroimaging data analysis (EEG, MRI)
- Scientific and popular communication (presentations, writing scientific articles, reports, funding applications, and a patent)
- Student supervision

Virtual Reality Engineer for applied Neuroscience Research 01.2018 - 03.2020
Fondation Campus Biotech Geneva, Geneva, Switzerland
Permanent contract
- Development of software and hardware solutions to meet researchers' needs for data collection and analysis
- Design and implementation of new technologies for Virtual Reality
- Management of the facility equipment, users access and training
- Platform promotion
Examples of projects: development of a virtual reality and motion capture platform for MRI (EPFL, Unige); development of a golf simulator for rehabilitation (HUG)

MSc Computer Science and Image Sciences 2015 - 2017
Université de Strasbourg, France

Engineering degree in Computer Science 2014 - 2017
ENSIIE Strasbourg, France

Selected scientific publications

Peer Reviewed journal papers :

L. Albert, B. Herbelin, F. Bernasconi, O. Blanke, “Extrastriate activity reflects sensorimotor-induced bias in estimating number of visual humans“, Cerebral Cortex, 2025

L. Albert, N. Vohar, J. Potheegadoo, F. Bernasconi, O. Blanke, “Visual hallucinations in Parkinson’s disease are associated with deficits in social perception“, Journal of Parkinson’s Disease, 2025

L. Albert, F. Bernasconi, J. Potheegadoo, O. Blanke, “Home-based online line bisection test detects visuo-spatial neglect and pseudoneglect in Parkinson’s disease“, Parkinsonism & Related Disorders, 2025

L. Albert, J. Potheegadoo, B. Herbelin, F. Bernasconi, O. Blanke, “Numerosity estimation of virtual humans as a digital-robotic marker for hallucinations in Parkinson’s disease“, Nature Communications, 2024

H.J. Moon, L. Albert, E. De Falco, C. Tasu, B. Gauthier, H. Park, O. Blanke, “Changes in spatial self-consciousness elicit grid cell-like representation in entorhinal cortex“, Proceedings of the National Academy of Sciences (PNAS), 2024

C. Jeunet, L. Tonin, L. Albert, R. Chavarriaga, B. Bideau, F. Argelaguet, J. d. R. Millán, A. Lécuyer, R. Kulpa, “Uncovering EEG Correlates of Covert Attention in Soccer Goalkeepers: Towards Innovative Sport Training Procedures“, Scientific Reports, 2020

C. Jeunet, L. Albert, F. Argelaguet, A. Lécuyer, “Do you feel in control?: Towards novel approaches to characterise, manipulate and measure the sense of agency in virtual environments“, IEEE Transactions in Visualization and Computer Graphics (TVCG), 2018 – Honorable mention for best paper at the IEE VR conference

Peer Reviewed Conference Papers :

B. Gauthier, L. Albert*, B. Herbelin, R. Martuzzi, O. Blanke, “Virtual Reality platform for functional Magnetic Resonance Imaging in Ecologically valid conditions“, Virtual Reality Software and Technology, 2021*

L. Albert, F. Lance*, M. Dubessy, B. Herbelin, G. Reymond, O. Blanke, “Real-time 360° body scanning system for virtual reality research applications“, 3DBodyTech, 2019*

Teaching

Hands-On Open & Reproducible Data Science 2021-2023

Co-organizer with Dr. M. Dayan | Journal Club - Lemanic Neuroscience Doctoral School

Introduction to Applied Data Science 2021-2022

Teaching assistant | Dr. M. Dayan | Level: PhD | Programs: Neuroscience

Object oriented programming (CS-112i) 2021-2022

Teaching assistant | S. Jamila | Level: Bachelor 1 | Programs: Life Science Engineering

Numerical analysis (MATH-251c) 2021-2022

Teaching assistant | Prof. S. Deparis | Level: Bachelor 2 | Programs: Neuroscience, Life Science Engineering

Introduction to Applied Data Science 2020-2021

Teaching assistant | Dr. M. Dayan | Level: PhD | Programs: Neuroscience

Numerical analysis (MATH-251c) 2020-2021

Teaching assistant | Prof. S. Deparis | Level: Bachelor 2 | Programs: Neuroscience, Life Science Engineering

Neuroscience: behavior and cognition (BIO-483a) 2020-2021

Teaching assistant | Prof. O. Blanke | Level: Master 2 | Programs: Neuroscience, Life Science Engineering

Patent

Numerosity estimation impairment measurement system (WO2024161264A1)

2024

Olaf Blanke, Louis Albert, Bruno Herbelin, Fosco Bernasconi, Jevita Potheegadoo

Awards

Best Swiss Movement Disorders Paper Award 2024

2024

The Foundation for Research in Parkinson’s and Movement Disorders

Student Poster Award – first place

2023

Association of Scientific Studies of Consciousness (ASSC)

Honorable mention for Best journal paper award – second prize

2018

IEEE VR (Virtual Reality)

Scientific outreach

Un test qui permet de mesurer la susceptibilité aux hallucinations ressenties

2024

Radio Télévision Suisse | CQFD (French)

Scientists simulate hallucinations in Parkinson’s study

2024

Reuters

From LSD to AI with Switzerland’s Brain Explorers

2023

Bloomberg Originals | Hello World with Ashlee Vance

Selected personal project

M3C 2026 Congress in Virtual Reality

2026

Design, development and management of a technical solution to run a conference in virtual reality (Montreal Child CDSS Congress 2026 (M3C 2026), CHU Sainte-Justine, Montréal, Canada – May 5th 2026)

M3C 2025 Congress in Virtual Reality

2025

Design, development and management of a technical solution to run a conference in virtual reality (M3C 2025 International Congress: Innovation in Digital Health and Artificial Intelligence; AI Cluster Acute Care for Children, CHU Sainte-Justine, Montréal, Canada – May 13th & 14th 2025 - ~ 80 international participants)

Hitman WoA multiplayer mod

2023

Implementation of a multiplayer mod for Hitman World of Assassination

Others

Computer Science	Languages (C, C++, C#, Python, Javascript, R, Matlab, OpenGL, ...) Softwares (Unity, Unreal Engine, Qualisys Track Manager, ...)
Experimental skills	Virtual / Extended / Mixed Reality Motion Capture Robotics Neuroimaging: EEG, fMRI MRI operator
Languages	French - native English - fluent (speaking, reading, writing) Spanish - basic (speaking, reading, writing)