

PROFILE

- 10+ years of quantitative research experience after Ph.D. in human vision and human learning
- Strong background in cognitive neuroscience, statistics and programming
- 18 scientific publications in academic journals, 22 collaborations, 28 students/interns mentored

SKILLS

References upon request

Quantitative Science Psychophysics and psychometrics, brain imagery, quantitative and computational models, meta-analyses, kinematics, experimental designs and RCT

Statistics parametric or not, frequentist or Bayesian, GLM/GLME, hierarchical models, Matlab/R/SPM.

Programming *Proficient*: MATLAB, PsychToolBox; *Intermediate*: R, Python, PsychoPy, Stan

Data science machine learning (classifications, support-vector machine), cross-validation, MRI analysis (pRF & MVPA decoding), factor analysis/PCA, bootstrapping, feature selection, data imputation (MICE, k-nearest neighbors), artificial neural networks (ANFIS, denoising auto-encoders), HPO

Modeling neural models (Runge-Kutta), probabilistic behaviors, optical models (Zernike polynomials)

Data wrangling, data visualization (*intermediate*)

MRI data analysis: machine learning (MVPA), pRF/retinotopy (mrVista, FSL, Freesurfer), statistics (SPM).

Experience with clinical patients: amblyopia treatment, optometry (*basics*), ethics, data protection, recruitment

Lab managing: project managing of medium-size teams, lab management, collaborative tools (*advanced*)

Teamwork 22 collaborations (11 active), 28 students/interns, [Github](#), open-access/open-source

Technical apparatus: MRI scanners (3T Siemens Trio), eye-tracking systems (Eyelink II, Arrington VisualSystem, Viewpoint), full-body motion tracking (Optitrack)

Communication Invited talks & webinars (18), conferences (21), various interviews (20) for TV (RTL-TVI), radio (e.g. BBC, CBS, KBCS, NPR, BYU, RTS) and newspapers (e.g. PC gamer, La Recherche).

Teaching 269 hours at all university levels and continuing education (science, visual neuroscience)

Writing Publications in academic journals (18), grants (6)

Web design HTML/CSS, Javascript, CMS, PHP/SQL (*basics*)

OS Mac, Windows

First Aid Workplace first-Aider Certification (Sauveteur Secouriste du Travail - 2022)

Languages: French (*native*), English (*fluent*), German (*basics*)

EXPERIENCE

Research Scientist

2019-present

Sorbonne University, Paris

- *Created a new method to quickly estimate perception and two new stereotests. Led a team to test their psychometric properties. Applying the tests to a cohort of aging people to investigate aging.*
- *Creating a machine-learning model to understand the cognitive causes of falls during aging.*
- *Led a collaborative review on the effects of screens on very young children.*
- *Leading a cross-sectional experiment on the effect of meditation on learning*
- *Designed and leading an experiment on the role of binocular vision in everyday life through kinematics.*
- *2 ongoing patents, 3 publications, 5 conferences, 10 students, 4 talks*

- Research and Teaching Fellow** **2017-2019** **University of Geneva, Geneva**
- *Conducted a pre-registered RCT showing that action video games increase learning speed*
 - *Conducted a meta-analysis showing that as little as 20h of gaming are causing visual gains*
 - *Reviewed the literature and estimated that 7% of the population is blind to 3D (stereovision).*
 - *3 publications, 7 conferences, 5 students, 4 talks*
- Postdoctoral Scholar** **2016-2017** **University of California, Berkeley**
- *Created an experiment investigating the phenomenon of binocular rivalry in amblyopia*
 - *1 publication, 3 students, 2 talks*
- Research Fellow** **2015** **ENS / CNRS, Paris**
- *Created an experiment showing ways to cheat visual clinical tests and advocated for solutions*
 - *2 publications, 3 students, 2 talks*
- Research Fellow** **2014** **University of California, Berkeley**
- *Designed an experiment showing transfer of learning in 3D vision in amblyopia and recorded associated brain activity through MRI scans (pRF retinotopy) but failed to show cortical plasticity (using MVPA)*
 - *1 publication, 6 students, 1 talk*
- Postdoctoral Researcher** **2013** **University of Geneva, Geneva**
- *Built an experiment on the mechanisms of binocular vision and discovered dressmakers' high stereo-abilities, a result echoed by +58 news outlets*
 - *2 publications, 1 conference*
- Invited Visiting Scholar** **2012** **University of Oxford, Oxford**
- *Completed 1 experimental study on visual adaptation during a short stay*
- Postdoctoral Researcher** **2012** **Paris Cité University / CNRS**
- *Designed an experiment testing predictions of the predictive adaptation framework with mixed results*
 - *1 publication, 2 conferences*
- Invited Visiting Scholar** **2010-2011** **Vanderbilt University, Nashville**
- *Created and tested a computational model of human binocular rivalry (artificial neural network)*
 - *Designed and conducted two experiments on binocular rivalry*
 - *1 publication & 1 conference*
- Summer intern** **2007** **University of St. Andrews, UK**
- *Conducted an experiment showing mysterious depth errors leading to 1 publication & 1 conference*

EDUCATION

- Ph.D.** **2011** **Vision Science** **Paris Cité University**
- *Created the predictive adaptation framework to explain the results of two new experiments*
 - *Conducted 2 experiments demonstrating probabilistic computations in human visual perception*
 - *3 publications, 4 conferences, 1 talk, 1 student mentored*
- M.Sc.** *Valedictorian* **2008** **Cognitive Sciences** **Paris Cité University / ENS Paris / EHESS**
- B.S.** **2006** **Psychology** **Paris Cité University**

PERSONAL COMMITMENT

Scientific fact-checking, as content editor at [Adios Corona](#), a website providing COVID-related scientific recommendations translated in 10 languages (>1M visits)

Open access to science, as provider of a [webpage dynamically listing servers](#) allowing free access to all science (>0.5M visits)