Camille Gontier

PhD in theoretical neuroscience
MSc in space engineering

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Date of birth: July 12th 1991
Nationalities : French, Canadian
Google Scholar profile
GitHub profile
Stack Exchange profile

Education

2019 **Cellular, Computational and Cognitive Neuroscience (C3N) summer school**, *Princeton University*.

2016 **Ecole Normale Supérieure de la rue d'Ulm**, *Paris*.
Master in Cognitive Science. Major in Mathematical, Physics and Computer science Modeling, Cogmaster programme.

2015 **ISAE-Supaéro**, *Toulouse*.
Master in Aerospace Engineering. Major in **Automatic Control** and **Space Systems Engineering**. Double diploma with **HEC Paris**.

Employment history

Since 2023 **Postdoctoral Associate at the Rehabilitation and Neural Engineering Laboratory**, *University of Pittsburgh, USA*.

2022 – 2023 **Postdoctoral researcher at the Department of Physiology**, *University of Bern, Switzerland*.

2018 –2022 **PhD candidate at the Department of Physiology**, *University of Bern, Switzerland*.
Research project on Statistical approaches for synaptic characterization. Jointly supervised by Prof. Pascal Pfister (Department of Physiology, University of Bern) and Prof. Martin Müller (Department of Molecular Life Sciences, University of Zurich).

Since 2019 **Founder and Chief Scientist at LIDE Space**, *Louvain-la-Neuve, Belgium*.
LIDE is the first commercial provider of microgravity on gliders, using sailplane gliders to perform parabolic flights.

2016 – 2018 **Development engineer at the Attitude and Orbit Control department**, *Airbus Defence and Space, Toulouse*.
Development of AOCS algorithms and software for Eurostar 3000, Eurostar Neo, and Quantum communication satellites.

2016 **Master project at the Ecole Polytechnique Fédérale de Lausanne (EPFL)**, *Center for Neuroprosthetic and Brain Mind Institute, Switzerland*.
Research project on the Cortical Encoding of Leg Kinematics in Healthy and Parkinsonian Non-Human Primates.

2015 **Master project at the French Space Agency (CNES)**, *Attitude and Orbit Control Systems Department, Toulouse*.
Research project on periodic control for LEO satellites attitude control systems.

Skills

French Native language.

English Fluent, both written and oral. TOEIC score : 985/990

German Fluent, both written and oral. Goethe-Zertifikat level : C1 (5/6)

IT Familiar with the following softwares and languages :

Approved research projects

2023 – 2025 **SNF Postdoc.Mobility Grant**.
Issued by the Swiss National Science Foundation for the research project *Improving the precision, stability and robustness of Brain-Computer Interfaces with Bayesian inference* at the University of Pittsburgh.

Supervision of junior researchers

2023–2024 **Undergraduate research project supervision**.
Supervision of a Pitt undergraduate student on the project *Studying the dimensionality of information encoded by the motor cortex*.

Institutional responsibilities and teaching activities

Since 2022 **Reviewer**.
PLOS CB, IEEE Robotics and Automation Letters, Proceedings of the IEEE, and Cybathlon.

Since 2022 **Member of the Board of Advisors**, *SEDS France*.

2022 **Physiologie : Synapsen und Regelkreise (Teaching Assistant)**, *Medical school, University of Bern*.

2019 – 2022 **Physiologie-Praktikum : Okulomotorik und Vestibularapparat (Teaching Assistant)**, *Medical school, University of Bern*.

2018 – 2022 **Introduction to biological and computational learning (Teaching Assistant)**, *Master in Biomedical Sciences, University of Bern*.

Organization of conferences

2019 – 2022 **Public Relations Manager for the Neuro Meetups Bern**.
Organization of monthly conferences dedicated to neuroscience and academia.

Awards

2019 **$pace Is Business**.
LIDE won the $pace is Business Competition 2019 jointly organised by the SGAC and the Entrepreneurship and Investment Committee (EIC) of the IAF.

2019 **CNS*2019 Travel award**.
Sponsored by the OCNS and the Brain Corporation.

2015 **Medal of the URISMIP**.
I have been awarded the medal of the URISMIP (chapter of scientists and engineers of the Toulouse area) and invited to the AIAA conference for the quality of my final report following my research project at the CNES.

2015 **National Finalist of the 2015 FameLab contest**, *(scientific communication competition)*.

Publications

2023 **Cerquetella, Gontier et al. Scaling of ventral hippocampal activity during anxiety**, *bioRxiv preprint*.
Link

2023 **Gontier et al. Efficient Sampling-Based Bayesian Active Learning for synaptic characterization**, *PLOS Computational Biology*.
Link

2022 **Gontier et al. DELAUNAY: a dataset of abstract art for psychophysical and machine learning research.**, *arXiv preprint*.
Link

2020 **Caprace, Gontier, et al. Experimental Characterization of Weightlessness During Glider Parabolic Flights**, *Microgravity Science and Technology, 32(6), 1121-1132*.
Link

2020 **Gontier and Pfister. Identifiability of a Binomial Synapse**, *Frontiers in computational neuroscience, 14, 86.*
Link

2019 **Bykowska, Gontier, et al. Model-based inference of synaptic transmission**, *Frontiers in synaptic neuroscience, 11 , 21.*
Link

2017 **Gontier. How to prevent mind-wandering during an EVA ? Presentation of a mind-wandering detection method using ECG technology in a Mars-analog environment**, *Acta Astronautica, 140, 105-112.*
Link

Conferences

2023 **SfN**, *Washington, DC.*
Nanosymposium talk: Efficient sampling-based Bayesian Active Learning for synaptic characterization.

2023 **Advances in Motor Learning and Motor Control**, *Washington, DC.*
Talk: Continuous encoding of intent and error in the human motor cortex.

2022 **73rd International Astronautical Congress (IAC)**, *Paris, France.*
Technical session: NeuronGrav: characterizing neuronal responses in altered gravity via glider-based parabolic flights (Microgravity Sciences and Processes Symposium).

2022 **Cosyne**, *Lisbon, Portugal.*
Poster presentation: Bayesian active learning for closed-loop synaptic characterization.

2021 **Champalimaud Research Symposium**, *Lisbon, Portugal.*
Poster presentation: Modelling synaptic transmission based on subsynaptic glutamate receptors distribution.

2020 **16th Bernstein Conference**, *Berlin, Germany.*
Poster presentation: Fast and online inference of synaptic parameters.

2019 **70th International Astronautical Congress (IAC)**, *Washington, DC.*
Technical session: Glide, without g - a systematic quantification of gliders 0-g flight capabilities (Microgravity Sciences and Processes Symposium).

2019 **CNS**, *Barcelona, Spain.*
Oral presentation: Identifiability of a binomial synapse.

2017 **13th PEGASUS-AIAA Student Conference**, *Berlin, Germany.*
Talk: Study of an allocation-based controller for the attitude control of low Earth orbit satellites.

2016 **67th International Astronautical Congress (IAC)**, *Guadalajara, Mexico.*
Technical session: How to prevent mind-wandering during en EVA ? Presentation of a mind-wandering detection method using ECG technology in a Mars-analog environment (Human Spaceflight Symposium).