

Thibault Gateau

Driver's licence

Professional Experience

- Since 2023** [ISAE - SUPAÉRO](#) (SUPERIOR INSTITUTE OF AERONAUTICS AND SPACE), Toulouse, France.
Associate Professor in Autonomous Decision making for Advanced Space Concepts .
Keywords : CubeSats, Concurrent Design Engineering, Preliminary design, Automated Planning, Multi-Agent Systems, Autonomous decision making.
- 2017-2022** [ISAE - SUPAÉRO](#) (SUPERIOR INSTITUTE OF AERONAUTICS AND SPACE), Toulouse, France.
Space System Engineer.
Keywords : Softwares, Education, Ground Segment, Nanosatellite preliminary design, NIMPH Cubesat, FEDER-SUDOE Nanostar Project.
- 2013-2017** [ISAE - SUPAÉRO](#) (SUPERIOR INSTITUTE OF AERONAUTICS AND SPACE), Toulouse, France.
Postdoctoral position in the Human Factors and Neuroergonomics Team.
Subject : Interaction between the human operator and a team of autonomous vehicles.
Keywords : Neuroergonomics, Adaptive Interaction, Multi-Agent Systems, Autonomous Vehicles, Human Machine Interface, Brain Computer Interface, fNIRS, Eye-tracking, ECG.
- 2009-2012** [ONERA/DCSD](#), Toulouse, France.
PhD in Artificial Intelligence.
Subject : Mission supervision for a team of autonomous and heterogeneous vehicles, in a dynamic environment, under uncertain communications.
Keywords : Planning, Re-planning, Plan Repair, Embedded Architectures, Multi-Agent Systems, Autonomous Decision-Making, team cooperation.
Directors : Magali Barbier and Charles Lesire.
Role : Conception of the cooperation manager in the [Action Project](#).
- 2009-2012** [ISAE-SUPAÉRO](#), Toulouse, France.
Assistant Teacher in Object-Oriented Programming, 40h/year.
- 2009** [ONERA/DCSD](#), Toulouse, France.
(6 months) **Research internship** in a laboratory.
Subject : Mission supervision for a set of autonomous vehicles.
- 2008** [SEETHROO](#), Los Angeles, United-States.
(3 months) **Internship** in an Internet start-up, oriented on adds targeting.
Keywords : Ruby on Rails, code refactoring, code obfuscation, unit tests, functional tests.
- 2007** [CRYA DE LA UNAM](#), Morelia, Mexique.
(2 months) [CRYA](#) (Center of Radioastronomy and Astrophysics) of the UNAM (Universidad Nacional Autónoma de México).
Technical assistant : software testing for application in astrophysics and manuals writing.

Education

- 2009 – 2012 ONERA /DCSD, Toulouse, France.
PhD in Artificial Intelligence.
- 2008 – 2009 NATIONAL POLYTECHNIC INSTITUTE OF TOULOUSE, Toulouse, France.
Master's degree in Artificial Intelligence.
- 2006 – 2009 ENSEEIHT, Toulouse, France.
Engineer's degree in Computer Science and Applied Mathematics.
(Superior National Engineering School in Electrotechnics, Electronics, Computer Science, Hydraulics and Telecommunications).
- 2004 – 2006 CPGE in Lycée Clémenceau, Nantes, France.
Preparatory classes for admission exams into national engineering schools.
- 2003 – 2004 Lycée Français Blaise Pascal, Libreville, Gabon.
Bachelor's degree (Sciences), with honors.

Languages

- **French** : Native language.
- **English** : Fluent (TOEIC : 920).
- **Russian** : Beginner (2 years of courses).
- **Spanish** : Bilingual (7 years in Mexico).
- **German** : Beginner (2 years of courses).

Computer Skills

- OS : GNU/Linux (Ubuntu), Unix, Solaris, Windows 9x, XP, Vista, 7.
- Programming : Languages : OOP (Java, C++, Ruby, Python); Imperative (C, Fortran, script Shell); Functional (Caml, Pascal); Databases (MySQL); logical (Prolog).
Frameworks : Ruby on Rails, Delphi, Eclipse (Europa), QtCreator (and Qt libraries), NetBeans.
Web Technologies : HTML, PHP, J2EE, web-services.
Modeling : UML, Merise.
Networking (TCP/IP) and middlewares (Corba, RMI, Yarp).
- Others : Matlab, Maple, L^AT_EX, classical Office suites (Microsoft Office : Word, Excel, PowerPoint and Open Office).
- Specifics : Orocos (Robotics framework component based), ROS (Robot Operating System), bases on IDL (Interactive Data Language) and Vapor (software used for large data analysis and visualization).

Personal activities

- Reading (scientific reviews, techno-thriller, fantasy, sci-fi), guitare, climbing, aeromodeling, gliding, para-gliding (IPPI 6), jugglery, diving (N2 licence, N1 biology licence), ju-jitsu.
- First aid attendant (since 2011).
- Good geographical flexibility (7 years in Mexico, 6 years in Madagascar, 3 years in Gabon).

Journal papers

1. Giacomo Luccisano, Sophia Salas Cordero, Thibault Gateau, and Nicole Viola. Open-source data formalization through mbse for concurrent preliminary design of cubesats. *Aerospace*, 11(702), 2024. doi: <https://doi.org/10.3390/aerospace11090702>
2. Sébastien Henry, Roberto Armellin, and Thibault Gateau. Safe event pruning in spacecraft conjunction management. *Astrodynamics*, 2023
3. Daniel E Callan, Thibault Gateau, Gautier Durantin, Nicolas Gonthier, and Frédéric Dehais. Disruption in neural phase synchrony is related to identification of inattentive deafness in real-world setting. *Human brain mapping*, 39(6) :2596–2608, 2018
4. Thibault Gateau, Hasan Ayaz, and Frédéric Dehais. In silico vs. over the clouds : on-the-fly mental state estimation of aircraft pilots, using a functional near infrared spectroscopy based passive-bci. *Frontiers in human neuroscience*, 12 :187, 2018
5. Charles Lesire, Guillaume Infantes, Thibault Gateau, and Magali Barbier. A distributed architecture for supervision of autonomous multi-robot missions. *Autonomous Robots*, 40(7) :1343–1362, 2016a

Conference papers

6. Mariana Alves, Justine Veirier D'Aiguebonne, Thibault Gateau, and Jerome Lacan. Blockchain-enabled redundant fractionated spacecraft system. In *2022 IEEE Aerospace Conference (AERO)*, pages 1–13. IEEE, 2022
7. Sophia Salas Cordero, Thibault Gateau, and Rob Vingerhoeds. Mbse challenges in the concurrent preliminary design of cubesats : Nanospace study. In *2022 IEEE International Systems Conference (SysCon)*, pages 1–8. IEEE, 2022
8. Christian Dahdah, Coline Van Leeuwen, Ziad Kheil, Jérôme Lacan, Jonathan Detchart, and Thibault Gateau. Enabling monetization of depreciating data on blockchains. In *7th International Conference on Information Systems Security and Privacy (ICISSP 2021)*, pages 500–507, 2021
9. Thibault Gateau, Lucien Senaneuch, Sophia Salas Cordero, and Rob Vingerhoeds. Open-source framework for the concurrent design of cubesats. In *2021 IEEE International Symposium on Systems Engineering (ISSE)*, pages 1–8. IEEE, 2021
10. Raphaëlle N Roy, Nicolas Drougard, Thibault Gateau, Frédéric Dehais, and Caroline PC Chanel. How can physiological computing benefit human-robot interaction? *Robotics*, 9(4) :100, 2020
11. My-Loan Dang, Doriane Perard, Jérôme Lacan, and Thibault Gateau. Educational nanosatellite hacking. *IEEE Aerospace*, 2020
12. Nicolas Humeau, Thibault Gateau, Guillaume Crooks, and Florentin Anne. A light-weight and efficient control center based on modern technologies. In *2018 SpaceOps Conference*, page 2634, 2018
13. Frédéric Dehais, Hasan Ayaz, and Thibault Gateau. Assessing working memory load in real flight condition with wireless fnirs. In *Neuroergonomics*, pages 213–214. Elsevier, 2018
14. Julio Hernanz Gonzalez, Thibault Gateau, Lucien Senaneuch, Theo Koudlansky, and Patrice Labedan. Jsatorb : Isae-supero's open-source software tool for teaching classical orbital calculations. In *7th International Conference on Astrodynamics Tools and Techniques (ICATT 2018)*, 2018

15. Raphaëlle N Roy, Thibault Gateau, Angela Bovo, Frédéric Dehais, and Caroline PC Chanel. Physiological markers for uav operator monitoring. In *Neuroergonomics*, pages 203–204. Academic Press, 2018
16. Frédéric Dehais, Raphaëlle N Roy, Gautier Durantin, Thibault Gateau, and Daniel Callan. Eeg-engagement index and auditory alarm misperception : An inattentive deafness study in actual flight condition. In *International Conference on Applied Human Factors and Ergonomics*, pages 227–234. Springer, Cham, 2017
17. Charles Poussot-Vassal, Raphaëlle N Roy, Angela Bovo, Thibault Gateau, Frédéric Dehais, and Caroline Ponzoni Carvalho Chanel. A loewner-based approach for the approximation of engagement-related neurophysiological features. 2017
18. Raphaëlle N Roy, Angela Bovo, Thibault Gateau, Frédéric Dehais, and Caroline P Carvalho Chanel. Operator engagement during prolonged simulated uav operation. *IFAC-PapersOnLine*, 49(32) :171–176, 2016
19. Frédéric Dehais, Raphaëlle N Roy, Thibault Gateau, and Sébastien Scannella. Auditory alarm misperception in the cockpit : an eeg study of inattentive deafness. In *International Conference on Augmented Cognition*, pages 177–187. Springer International Publishing, 2016b
20. Angela Bovo, Raphaëlle N Roy, Thibault Gateau, Frédéric Dehais, and Caroline Ponzoni Carvalho Chanel. Characterization with eeg and eye tracking of the impact of time-on-task on a uav operator. 2016
21. Gautier Durantin, Sébastien Scannella, Thibault Gateau, Arnaud Delorme, and Frédéric Dehais. Processing functional near infrared spectroscopy signal with a kalman filter to assess working memory during simulated flight. *Frontiers in human neuroscience*, 9 :707, 2016
22. Thibault Gateau, Caroline P Carvalho Chanel, Mai-Huy Le, and Frédéric Dehais. Considering human’s non-deterministic behavior and his availability state when designing a collaborative human-robots system. In *2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 4391–4397. IEEE, 2016
23. Charles Lesire, Guillaume Infantes, Thibault Gateau, and Magali Barbier. A distributed architecture for supervision of autonomous multi-robot missions. *Autonomous Robots*, 40(7) :1343–1362, 2016b
24. Frédéric Dehais, Raphaëlle N Roy, Thibault Gateau, and Sébastien Scannella. Auditory alarm misperception in the cockpit : a preliminary erp study to uncover evidences of inattentive deafness. 2016a
25. Thibault Gateau, Gautier Durantin, Francois Lancelot, Sebastien Scannella, and Frederic Dehais. Real-time state estimation in a flight simulator using fnirs. *PloS one*, 10(3) : e0121279, 2015
26. Frederic Dehais, Vsevolod Peysakhovich, Sebastien Scannella, Jennifer Fongue, and Thibault Gateau. Automation surprise in aviation : Real-time solutions. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*, pages 2525–2534. ACM, 2015
27. Julien Collart, Thibault Gateau, Eve Fabre, and Catherine Tessier. Human-robot systems facing ethical conflicts : a preliminary experimental protocol. In *Workshops at the Twenty-Ninth AAAI Conference on Artificial Intelligence*, 2015

28. Gautier Durantin, Sebastien Scannella, Thibault Gateau, Arnaud Delorme, and Frederic Dehais. Moving average convergence divergence filter preprocessing for real-time event-related peak activity onset detection : Application to fnirs signals. In *2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pages 2107–2110. IEEE, 2014
29. Thibault Gateau, Charles Lesire, and Magali Barbier. Hidden : Cooperative plan execution and repair for heterogeneous robots in dynamic environments. In *2013 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 4790–4795. IEEE, 2013
30. Thibault Gateau. *Supervision de mission pour une équipe de véhicules autonomes hétérogènes*. PhD thesis, Toulouse, ISAE, 2012
31. Thibault Gateau, Charles Lesire, and Barbier Magali. Hidden, une architecture décisionnelle distribuée pour la coopération de véhicules individuellement autonomes. In *RFA 2012 (Reconnaissance des Formes et Intelligence Artificielle)*, pages 978–2, 2012b
32. Thibault Gateau, Gaëtan Severac, Charles Lesire, Magali Barbier, and Eric Bensana. Knowledge base for planning, execution and plan repair. *PlanEx 2012*, page 3, 2012c
33. Thibault Gateau, C Lesire, and M Barbier. Local plan execution and repair in a hierarchical structure of sub-teams of heterogeneous autonomous vehicles. *ICAPS Doctoral Consortium*, 2010

Posters

34. T. Gateau, C. Lesire, and M. Barbier. Robust strategies for multi-robot team collaboration under uncertain communications. In *International Symposium on Distributed Autonomous Robotic Systems (DARS), Poster session*, Baltimore, MD, USA, 2012a

Educational Responsabilites

SSA pathway (3A Eng. Stu.)	Space Systems and Autonomy course in the Autonomous Systems field. Responsible of the content of 44h of classes in 3 rd years, including work and projects.
Space System Engineering (MAE2-SS)	Preliminary design of a micro satellite for Earth Observation. Responsible of the content of 26h of classes for 2 nd years Master Students in Space-System speciality.
Space System Engineering (MS-SS)	Preliminary design of a micro satellite for Earth Observation. Responsible of the content of 30h of classes for Specialized Master Students in Space Systems.
PIE-COS (3A Eng. Stu.)	Domain responsible of engineering and business projects. Conception et Opération des Systèmes spatiaux - COS - 3A. The projects must be sized for a group of 5 to 6 students, which represents 103 hours of work per student, for a total of around 515 hours of work. The primary vocation of these projects is to be multidisciplinary and engineering-based..

Teaching

Master (1 st year)	Algorithm and Computing.
Engineering students : (3 rd year)	Decision-making autonomy - hierarchical planning. System Autonomy (Système de décision (SISY341/FSI341)). Autonomy and Satellite Constellations.
Engineering students : (2 nd year)	S/C Preliminary Design. Object Oriented Programming.
MAE2-SS (2 nd year)	Space systems architecture.
MS-SS	Space systems architecture.
MS-AIBT (Apprentice)	Artificial Intelligence, Machine learning, Reinforcement Learning.

Supervision

Ph.D. Student (2024 - 2027)	Paul Pinteau. Autonomous Satellite Deorbiting with Collision Avoidance Capabilities. Co-Supervisor with Stéphanie Lizy Destrez (HDR). Collaboration : CNES - AIKO.
PostDoc - BPI funded (2025 - 2026)	Simon Bouriat. Virtual environment for simulating and analyzing orbital trajectories, resource consumption, and autonomy decision making. Co-Supervisor with Stéphanie Lizy Destrez (HDR). Collaboration : AIKO.