





Dr. Damien MOURATILLE

Neuroergonomics researcher

 [linkedin.com/in/damien-mouratille](https://www.linkedin.com/in/damien-mouratille)  Toulouse (France)  damien.mouratille@outlook.com  +33 7 61 51 66 88

EDUCATION

-
- | | |
|-----------------------------|---|
| June 2022
June 2019 | PhD in Cognitive Neuroscience, FRENCH CIVIL AVIATION UNIVERSITY (ENAC), Toulouse
Supervision : Pr. Franck Amadiou and Dr. Nadine Matton |
| June 2018
September 2016 | Neuropsychology and Cognitive Master's Degree, WITH HONORS, University of Toulouse
Supervision : Pr. Andre Tricot and Dr. Radouane El Yagoubi |

RESEARCH EXPERIENCE

-
- | | |
|-----------------------------|--|
| Today
June 2022 | Post-doc, ENAC, Toulouse
<i>Supervision : Dr. Nadine Matton and Dr. Jean-Paul Imbert</i>
Project 1 : Selection of Air Traffic Controllers based on psychotechnical and physiological measures
Project 2 : Competency-Based Training and Assessment of Air Traffic Controllers and Pilots
Project 3 : Aging and cognitive abilities of Swiss Air Traffic Controllers
Project 4 : Selection of pilots based on psychotechnical measures
Project 5 : Development of an eye-tracking library (ArGaze)
EEG Eye-Tracker EDA ECG Current |
| June 2022
June 2019 | PhD thesis, ENAC, Toulouse
<i>Supervision : Dr. Nadine Matton and Pr. Franck Amadiou</i>
Research Topic : Individual differences in competencies : psychotechnical and physiological assessments applied to the selection of air traffic controller students
Confidential EEG Eye-Tracker EDA ECG Finished |
| September 2018
July 2018 | Engineer, CNRS, Toulouse
<i>Supervision : Dr. Pierre-Vincent Paubel and Dr. Bastien Tremoliere</i>
Research Topic : Mortality salience and physiological validation
Mortality salience Eye-Tracker ECG EDA Finished |
| June 2018
October 2017 | Master thesis, CLLE, Toulouse
<i>Supervision : Pr. Andre Tricot and Dr. Radouane El Yagoubi</i>
Research Topic : Road safety and cognitive load - TBRS model and physiological measures
Working memory Cognitive workload EEG fNIRS EDA ECG Car simulator Finished |
| September 2017
May 2017 | Research assistant, CO-DOT AND THALES CANADA, Quebec City (Canada)
<i>Supervision : Dr. Cindy Chamberland & Pr. Sebastien Tremblay</i>
Research Topic : Cognitive countermeasures as an intelligent solution to surveillance work
Attentional tunneling Eye-Tracker ECG EDA CCTV simulator Finished |
| April 2017
January 2017 | Research assistant, ISAE-SUPAERO, Toulouse
<i>Supervision : Pr. Mickael Causse</i>
Research Topic : Decision making, Deafness and neurocognitive processes
Deafness High-density EEG ERP LORETA Finished |
| May 2017
September 2016 | Master thesis, ENAC, Toulouse
<i>Supervision : Dr. Radouane El-Yagoubi, Dr. Nadine Matton and Pr. Mickael Causse</i>
Research Topic : Relationships between emotion and cognitive workload on flight simulator
Cognitive workload Emotion EEG fNIRS EDA ECG Flight simulator Finished |

INDUSTRIAL EXPERIENCE

-
- | | |
|--------------------------|--|
| May 2019
October 2018 | (Neuro/Data)Scientist, HUMAN DESIGN GROUP, Toulouse (France)
Industrial Topic : Multimodal sensors fusion for pilot monitoring at EYDN – AIRBUS Operation S.A.S.
Sensors Benchmarking Python Finished |
|--------------------------|--|

SKILLS

Programming	Python, Matlab, R, PHP, JS, React-Native, Arduino, ESP32
Hardware	Bitalino, Brain products, Biosemi, Biopac, Enobio, NirX, EyeLink, PupilLabs, SmartEye, Tobii
EEG	Assessment of brain rhythms (spectral analysis), extraction of neuronal activation induced by stimulus (ERP), resolve of inverse problem (LORETA)
ECG	Heart rate and heart rate variability (temporal analysis), assessment of sympathetic and parasympathetic activity (spectral analysis)
fNIRS	Assessment of hemodynamic activity (temporal analysis)
Eye-Tracker	Scan path, pupillometry
EDA	Assessment of tonic and phasic components (temporal analysis), assessment of sympathetic activity (spectral analysis)
Statistics	Descriptive and inferential statistics, basic machine learning (SVM, LDA, LSTM), meta-analysis
Others	LabStreamingLayer, LaTeX, Eprime, Qualtrics, Microsoft Office

TEACHING EXPERIENCE

- ▶ Everything you need for a successful defense (*French Air Traffic controller students, French Aviation Technician students, African Aviation Technician students, Engineering students, ENAC, France*) : 230h
- ▶ Cognitive Psychology (*Psychology students, University Toulouse Jean Jaurès, France*) : 48h
- ▶ Introduction to psychophysiology (*Psychology students, University Toulouse Jean Jaurès, France*) : 40h
- ▶ Human Factors & Physiological measures (*CHI students, Engineering students, ENAC, France*) : 26h
- ▶ Statistics (*STAPS students, University Toulouse Paul Sabatier, France*) : 24h
- ▶ EEGLAB : Introduction & Hands-on (*Master and PhD students, Researchers, University of Mons, Belgium*) : 4h

SCIENTIFIC COMMUNICATIONS

Scientific journal :

- ▶ **Mouratille, D.**, Amadiou, F., & Matton, N. (Manuscript submitted for publication). Cognitive Abilities for Air Traffic Controllers Selection : A Valid Predictor for Scientific Proficient Applicants?.
- ▶ de la Hogue, T., **Mouratille, D.**, Causse, M., & Imbert, J.-P. (Manuscript submitted for publication). ArGaze : An Open and FLEXible Software Library for Gaze Analysis and Interaction.
- ▶ Fabre, E. F., **Mouratille, D.**, Bonnemain, V., Palmiotti, G. P., & Causse, M. (Manuscript submitted for publication). Making Moral Decisions With Artificial Agents As Advisors. An fNIRS Study.
- ▶ Causse, M., **Mouratille, D.**, Baumgartner, M., & Imbert, J.-P. (Chapter submitted for publication). The Impact of Age on Cognitive Performance at Work : A Focus on Pilots and Air Traffic Controllers. In Handbook of Aviation Neuropsychology; A Practical Guide for the Clinician.
- ▶ Causse, M., **Mouratille, D.**, Rouillard, Y., El Yagoubi, R., Matton, N., & Hidalgo-Muñoz, A. (2024). How a pilot's brain copes with stress and mental load? Insights from the executive control network. Behavioural Brain Research, 456, 114698.
- ▶ **Mouratille, D.**, Amadiou, F. & Matton, N. (2022). A Meta-Analysis on Air Traffic Controllers Selection : Cognitive and Non-Cognitive Predictors. Journal of Vocational Behavior, 138.
- ▶ Causse, M., Parmentier, F., **Mouratille, D.**, Thibaut, D., Kisselenko, M., & Fabre, E. (2022). Busy and confused? High risk of missed alerts in the cockpit : an electrophysiological study. Brain Research, 1793.
- ▶ Hidalgo-Muñoz, A. R., **Mouratille, D.**, El-Yagoubi, R., Causse, M., Rouillard, Y., & Matton, N. (2021). Conscientiousness in Pilots Correlates with Electrodermal Stability : Study on Simulated Flights under Social Stress. Safety 2021, 7, 49.
- ▶ Djeriouat, H., Matton, N., & **Mouratille, D.** (2021). Does hostile intent cause physiological changes? An airport security check simulation experiment. International Journal of Psychophysiology, 165, 29-35.
- ▶ Hidalgo-Muñoz, A. R., **Mouratille, D.**, Matton, N., Causse, M., Rouillard, Y., & El-Yagoubi, R. (2018). Cardiovascular Correlates of Emotional State, Cognitive Workload and Personality Style during a Realistic Flight Simulation. International Journal of Psychophysiology, 128, 62-69.

Others :

- ▶ **Mouratille, D.**, Amadiou, F. & Matton, N. (September 2024). Cognitive Abilities and Gender during Air Traffic Controllers Selection and Training. 35th Conference of European Association for Aviation Psychology (EAAP). Athens (Greece).

- Marois, A., **Mouratille, D.**, Pratviel, Y., Chamberland, C., & Tremblay, S. (July 2024). Using Cardiac and Electrodermal Activity as Cognitive Markers for Interruptions and Distraction in a Surveillance Simulation. AHFE 2024. Nice (France).
- Baumgartner, M., Cabon, P., Drogoul, F., Causse, M., Imbert, J.-P., & **Mouratille, D.** (July 2024). Scientific Evaluation of the Impact of an Increase in the Retirement Age on the Cognitive Functions and Well-Being of Air Traffic Controllers (ATCOs). AHFE 2024. Nice (France).
- **Mouratille, D.**, Cabon, P., Drogoul, F., , Imbert, J.-P., Baumgartner, M., & Causse, M. (July 2024). Évaluation Scientifique de l'Augmentation de l'Age de Départ à la Retraite sur les Fonctions Cognitives et le Bien-être des Contrôleurs Aériens. XXVes Journées Internationales de Psychologie Différentielle. Rennes (France).
- **Mouratille, D.**, Amadiou, F. & Matton, N. (July 2024). Habilités cognitives pendant la formation de contrôleur aérien : stabilité ou évolution? XXVes Journées Internationales de Psychologie Différentielle. Rennes (France).
- **Mouratille, D.**, Amadiou, F. & Matton, N. (May 2024). A Preliminary Study on the Predictive Validity of Neural Efficiency for the Air Traffic Controllers Selection. 2024 International Conference on Cognitive Aircraft Systems (ICCAS). Toulouse (France).
- **Mouratille, D.**, Cabon, P., Drogoul, F., , Imbert, J.-P., Baumgartner, M., & Causse, M. (May 2024). A Physiological Study on the Impact of Aging on Cognitive Performance of Air Traffic Controllers. 2024 International Conference on Cognitive Aircraft Systems (ICCAS). Toulouse (France).
- **Mouratille, D.**, Cabon, P., Drogoul, F., Causse, M., Imbert, J.-P., & Baumgartner, M. (May 2024). The Retirement Age of ATCOs : A Case Study on the Application of Science to Address a Societal Issue in Switzerland. 2024 Annual Meeting of the Aerospace Medical Association. Chicago (USA).
- Causse, M., **Mouratille, D.**, & Imbert J.-P. (2023). Cognitive performance and ageing in air traffic controllers : when to retire? 2023 Padova MAIA Project. Padova (Italia).
- **Mouratille, D.**, Matton, N. & Amadiou, F. (2021). A Preliminary Study on the Usefulness of Physiological Assessment for the ATCO Selection. 2021 International Symposium on Aviation Psychology (ISAP). Oregon State University (USA).
- Hidalgo-Muñoz, A. R., **Mouratille, D.**, Matton, N., Causse, M., Rouillard, Y., & El-Yagoubi, R. (2020). Influence of Anxiety and Mental Workload on Flight performance in a Flight Simulator. In proceedings of 1st International Conference On Cognitive Aircraft Systems (ICCAS). Toulouse (France).
- **Mouratille, D.**, Hidalgo-Muñoz, A. R., Matton, N., Rouillard, Y., El-Yagoubi, R. & Causse, M. (2020). Flight simulator and fNIRS : study of relation between acute stress and cognitive workload. In proceedings of 1st International Conference On Cognitive Aircraft Systems (ICCAS). Toulouse (France).
- Hidalgo-Muñoz, A. R., **Mouratille, D.**, Matton, N., Causse, M., Rouillard, Y., & El-Yagoubi, R. (2018). Cognitive workload and personality styles in pilots : a heart rate study. Driver Distraction and Inattention (DDI). Gothenburg (Sweden)
- **Mouratille, D.**, Hidalgo-Muñoz, A. R., Matton, N., Causse, M., Rouillard, Y., & El-Yagoubi, R. (2017). Emotional state and cognitive workload during a flight simulation : heart rate study. In proceedings of 19th International Conference on Applications of Neuropsychology, Cognition, Emotion, and Motivation (ICANCEM). Venice (Italy).
- Hidalgo-Muñoz, A. R., **Mouratille, D.**, Matton, N., Causse, M., Rouillard, Y., & El-Yagoubi, R. (2017). Cardiovascular Activity linked to the Emotional State and Cognitive Workload during a Flight Simulation. In proceedings of 4th International Conference on Physiological Computing Systems (ICPCS). Madrid (Spain).

OTHERS

- Supervisor of Master students : 1 Aeronautical Engineer, 4 Air Traffic Controllers
- Supervisor of intern : 1 Air Traffic Controller
- Member of an association of science popularization : Incognu (Toulouse) since September 2019
- Doctoral student representative at ENAC Research Council (Toulouse) : 2021-2022
- Co-organizer of 2017 Brain Week (Toulouse)