

Dr. Damien MOURATILLE

Human Factors and Neuroergonomics researcher

 [linkedin.com/in/damien-mouratille](https://www.linkedin.com/in/damien-mouratille)  Toulouse (France)  damien.mouratille@outlook.com

EDUCATION

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|----------------|---|
| June 2022 | PhD in Cognitive Neuroscience, FRENCH CIVIL AVIATION UNIVERSITY (ENAC), Toulouse (France) |
| June 2019 | <i>Supervision : Pr. Franck Amadieu and Dr. Nadine Matton</i>
Research Topic : Individual differences in competencies : psychotechnical and physiological assessments applied to the selection of air traffic controller students
Confidential |
| June 2018 | Cognitive Neuroscience Master's Degree, WITH HONORS, University of Toulouse (France) |
| October 2017 | <i>Supervision : Pr. Andre Tricot and Dr. Radouane El Yagoubi for MASTER THESIS</i>
Research Topic : Road safety and cognitive load - TBRS model and physiological measures
Working memory Cognitive workload EEG fNIRS EDA ECG Car simulator |
| May 2017 | Neuropsychology Master's Degree, WITH HONORS, University of Toulouse (France) |
| September 2016 | <i>Supervision : Dr. Radouane El-Yagoubi, Dr. Nadine Matton and Pr. Mickael Causse for MASTER THESIS</i>
Research Topic : Relationships between emotion and cognitive workload on flight simulator
Cognitive workload Emotion EEG fNIRS EDA ECG Flight simulator |

RESEARCH EXPERIENCE

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| Today | Post-doc, ENAC, Toulouse (France) |
| June 2022 | Research Topic : Individual differences in competencies : psychotechnical and physiological assessments applied to the selection of air traffic controller students
Confidential |
| September 2018 | Engineer, CNRS, Toulouse (France) |
| July 2018 | <i>Supervision : Dr. Pierre-Vincent Paubel and Dr. Bastien Tremoliere</i>
Research Topic : Mortality salience and physiological validation
Mortality salience Eye-Tracker ECG EDA |
| September 2017 | Research assistant, Co-DOT AND THALES CANADA, Quebec City (Canada) |
| May 2017 | <i>Supervision : Dr. Cindy Chamberland</i>
Research Topic : Cognitive countermeasures as an intelligent solution to surveillance work
Attentional tunneling Eye-Tracker ECG EDA CCTV simulator |
| April 2017 | Research assistant, ISAE-SUPAERO, Toulouse (France) |
| January 2017 | <i>Supervision : Pr. Mickael Causse</i>
Research Topic : Decision making, Deafness and neurocognitive processes
Deafness High-density EEG ERP LORETA |

INDUSTRIAL EXPERIENCE

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| Today | Freelancer, (NEURO & DATA)-SCIENTIST, Toulouse (France) |
| February 2020 | Methodological aspects of research from A to Z |
| May 2019 | Consulting engineer, HUMAN DESIGN GROUP, Toulouse (France) |
| October 2018 | <i>Data-science specialist for HUMAN FACTORS – EYDN – AIRBUS OPERATION S.A.S.</i>
Industrial Topic : Multimodal sensors fusion for pilot monitoring
Sensors Benchmarking Python |

TEACHING EXPERIENCE

- ▶ Cognitive Psychology (*Psychology students, University Toulouse Jean Jaurès, France*) : 48h
- ▶ Everything you need for a successful defense (*French Air Traffic controller students, French Aviation Technician students, African Aviation Technician students, Engineering students, ENAC, France*) : 127h
- ▶ Human Factors & Physiological measures (*CHI students, Engineering students, ENAC, France*) : 14h
- ▶ Introduction to psychophysiology (*Psychology students, University Toulouse Jean Jaurès, France*) : 40h
- ▶ Statistics (*STAPS students, University Toulouse Paul Sabatier, France*) : 24h
- ▶ EEGLAB : Introduction & Hands-on (*Master and PhD students, Researchers, University of Mons, Belgium*) : 4h

SKILLS

Programming	Python, Matlab, R, PHP/JS, SQL, React-Native, Arduino
Hardware	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

LANGUAGES

French	Native Speaker
English	Professional working proficiency

STRENGTHS

- Autonomous
- Curious
- Hard-working

SCIENTIFIC COMMUNICATIONS

Scientific journal :

- **Mouratille, D.**, Amadiou, F. & Matton, N. (submitted). A Meta-Analysis on Air Traffic Controllers Selection : Cognitive and Non-Cognitive Predictors. Journal of Vocational Behavior.
- 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. Manuscript submitted for publication.
- 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.

Oral presentation :

- **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. Oregon State University (USA).
- **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. Toulouse (France).
- 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. 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 2018). 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 2017). 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. Madrid (Spain).

OTHERS

- Doctoral student representative at ENAC Research Council (Toulouse, Toulouse) since February 2021
- Member of an association of science popularization : Incognu (Toulouse, France) since September 2019
- Co-organizer of 2017 Brain Week (Toulouse, France)