

# Marcia Bécu

PhD student in cognitive neuroscience

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29 years old



## Keywords

eye movements, eye tracking, spatial cognition, navigation, cognitive psychology, aging

## Work experience

2014–present **PhD student**, *Research chair Silversight (ANR-Essilor)*, Sorbonne Université, Paris, France.

- PhD defense scheduled in Decembre 2018
- Subject: Aged-related effect on gaze dynamics during real and virtual world navigation
- Supervisor: Dr Angelo Arleo
- Activities:
  - leader of 4 research projects
  - 3 submitted papers & 1 EPO patent application
  - 9 posters in national & international conferences (BEST POSTER AWARD)
  - 3 Bachelor's & 5 Master's students supervision

2013–2014 **Assistant research**, *Research Unit on Cognitive & Affective Sciences*, Lille, France.

Activities: participants recruitment and data collection

## Education

2017 **Eye-tracking in mixed or virtual realities workshop**, *University of Wuppertal*, Germany.

Practical considerations for VR eye-tracking

2016 **Real world eye-tracking course**, *Royal Holloway University of London*, UK.

Practical considerations for mobile eye-tracking

2014 **European Summer School on Eye Movement**, *University of Freiburg*, Germany.

Theories, neural bases, experimental designs and statistical analysis of eye movements studies in basic science and applied settings

2012–2013 **Research Master's degree in Neuropsychology and Clinical Neuroscience**, *Universities of Grenoble, Lyon, Toulouse*, France.

- Project: Eye-tracking as a biomarker of emotional response to a rTMS treatment

2007–2010 **Bachelor's degree in Psychology**, *University of Lille*, France.

- Project: Space perception modulation in healthy young participants
- Third year achieved with ERASMUS program in University of Bari, Italy

## Scientific contribution

### Papers

Denis Sheynikhovich, **Marcia Bécu**, Changmin Wu, Angelo Arleo (*accepted in Journal of Vision*) Unsupervised detection of microsaccades in a high-noise regime.

**Marcia Bécu**, Guillaume Tatur, Denis Sheynikhovich, Catherine Agathos, Luca Leonardo Bologna, Angelo Arleo (*under submission to Nature Human Behaviour*) Preference for geometric cues in aging: behavioral and oculomotor signatures during real-world navigation.

**Marcia Bécu**, Guillaume Tatur, Angelo Arleo (*under submission to Journal of Vision*) Impact of healthy aging on ocular fixation stability during optic flow.

**Marcia Bécu**, Denis Sheynikhovich, Guillaume Tatur, Angelo Arleo (*in preparation*) Age-related modulation of fixational eye movements faced to optic flow.

Stephen Ramanoel, **Marcia Bécu**, Guillaume Tatur, Karine Lagrené, Christophe Habas, Angelo Arleo (*in preparation*) Age-related changes in spatial learning of a real environment and gray-matter integrity.

## Patent

**Marcia Bécu et al.** (2017, application) Method for designing optical equipment based on a navigation strategy. European Patent Office.

## Posters (non-exhaustive list)

**Marcia Bécu**, Guillaume Tatur, Annis-Rayan Bourefis, Luca Bologna, Denis Sheynikhovich, Angelo Arleo; Age-related changes in gaze dynamics during real-world navigation. *Journal of Vision* 2017;17(10):540. doi: 10.1167/17.10.540.

Angelo Arleo, **Marcia Bécu**, Guillaume Tatur, Alix de Dieuleveult, Changmin Wu, Silvia Marchesotti, Denis Sheynikhovich; Effect of aging on ocular fixation and microsaccades during optic flow. *Journal of Vision* 2017;17(10):890. doi: 10.1167/17.10.890.

**Marcia Bécu**, Guillaume Tatur, Annis-Rayan Bourefis, Denis Sheynikhovich, Angelo Arleo (2017, August) *Age-related changes in gaze dynamics during real-world navigation*. Poster session presented at the European Conference on Eye Movements, Wuppertal, Germany.

**Marcia Bécu**, Stephen Ramanoël, Guillaume Tatur, Karine Lagrené, Christophe Habas, Angelo Arleo (2017, June) *Age-related changes in spatial learning of a real environment and gray-matter integrity*. Poster session presented at the Neuroscience Workshop Saclay, Saclay, France.

## Awards

- 2017 Best poster award at the Neuroscience Workshop Saclay
- 2012 Master grant, 'Fondation FondaMental – Institut Lilly'

## Computer skills

- Basic R, L<sup>A</sup>T<sub>E</sub>X, Adobe Illustrator
- Advanced Matlab, Office

## Press highlights

France 5 Le magazine de la santé : "Le sens de l'orientation modifié avec l'âge ?"  
alldocteurs.fr

CNRS Le Journal & Le Monde : "Does our sens of direction change as we get older?"  
lejournal.cnrs.fr

Senior actu : "Streetlab : pour mieux comprendre les effets du vieillissement visuel" www.senioractu.com

## Languages

- French **Mothertongue**
- English **Working proficiency**
- Italian **Conversationally fluent**

*Lived 1 year in Italy*

## Hobbies

- Skiing
- Dog agility
- Hiking
- Theatre