

# Mehdi Khamassi

## Short CV

Institute of Intelligent Systems and Robotics (ISIR)  
Sorbonne Université (SU) / ex Université Pierre et Marie Curie (UPMC)  
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<u>Webpage &amp; full CV</u>	<a href="http://people.isir.upmc.fr/khamassi">http://people.isir.upmc.fr/khamassi</a>
<u>Researcher IDs</u>	<a href="#">Scholar Page</a> , <a href="#">Orcid 0000-0002-2515-1046</a> , <a href="#">Scopus 6508136456</a>
<u>Date/place of birth</u>	18 Jan. 1980 in Paris, France
<u>Current position</u>	Director of research (DR2) at Centre National de la Recherche Scientifique (CNRS), section 7 “Information Sciences” and interdisciplinary committee 51 “Modeling and Analysis of Biological Data and Systems”
<u>Affiliation</u>	Institute of Intelligent Systems and Robotics CNRS / Sorbonne Université (SU) BC173, 4 place Jussieu, 75005 Paris
<u>Other current positions</u>	Coordinator of the transverse theme ‘Child-robot interactive learning’ at ISIR Co-director of studies, Cogmaster program, Ecole Normale Supérieure (ENS), Paris Co-animator of the “Robotics&Neuroscience” national working group (CNRS GDR) Visiting researcher at National Polytechnical University of Athens, Greece Associate member, Sorbonne Center for Artificial Intelligence (SCAI), Paris, France Collaborating member, Centre Union Neuro & AI, Québec, Canada Associate editor for Frontiers in Neurorobotics and Intellectica
<u>Education</u>	2014 HDR (Habilitation to Direct Researches), UPMC, Paris, France 2007 PhD in Cognitive Sciences, UPMC, Paris, France 2003 MSc in Cognitive Sciences, UPMC/ENS/Polytechnique/EHESS, Paris, France 2003 MEng in Computer Science, CNAM/ENSIIE, Evry, France
<u>Research Experience</u>	2010-2020 CNRS permanent researcher, ISIR, UPMC, Paris, France 2017-2020 Visiting academic at Dept Experimental Psychology, Univ. Oxford, UK 2013-2015 Visiting researcher, Center for Mind/Brain Sciences, U Trento, Italy 2008-2010 Post-doc, Stem-cell & Brain Research Institute, INSERM, Lyon, France 2008 (3m.) Guest researcher, Okinawa Institute of Science & Technology, Japan 2007-2008 Post-doc, Laboratory of Computer Science (LIP6), UPMC, Paris, France 2003-2007 PhD student, Collège de France / UPMC, Paris, France
<u>Invited talks</u>	62 invited talks (including 20 at international conf/symp/colloq, 2 keynotes)
<u>Project experience</u>	PI of CNRS “Osez l’Interdisciplinarité” ROBAUTISTE Project (2017-2019), Sorbonne Universités Robot-Parallelearning Project (2015-2016); Co-PI of several national (ANR, CNRS) and international (ANR-NSF, Royal Society-CNRS) projects; Participant to 5 EU projects and numerous national ones.
<u>Event organization</u>	Co-organizer of 11 international top-level meetings on decision-making, including yearly Symp. on Biology of Decision-Making (200 participants, 100 posters, 30 talks), 18 one-day national symposia on Robotics & Neuroscience (40 participants).
<u>Student supervision</u>	Supervised 7 completed PhDs; 6 ongoing ones; 2 postdocs; >30 Master/Eng students.
<u>Publication record</u>	44 journal articles, 5 edited journal special issues, 26 peer-reviewed international conference papers, 5 book chapters incl. MIT Press, Oxford Univ Press, 79 other pub. 3 best paper awards (La Recherche 2010; SAB 2012; IEEE RO-MAN 2018).
<u>Awards</u>	
<u>Teaching</u>	2 created courses (Robotics at Cogmaster program at ENS; Critical thinking at SU); Yearly invited courses: Polytechnique, ENS, SU, UPMC, U Paris-Saclay, U Lyon 1.
<u>Other responsibilities</u>	Member of the executive committee of the SMART Labex, 8 years / 5M€ transverse laboratory gathering 8 research institutes of Sorbonne Université, including ISIR (since 2012); Evaluation committee member for 3 assistant professor recruitments at UPMC, Univ. Cergy-Pontoise and Univ. Lorraine; Examiner/Reviewer for 27 PhD theses evaluation committees (incl. 4 as president of the jury), 4 Habilitations to Direct Research committees, and 17 mid-term PhD theses committees.

### 10 selected recent publications:

Wittmann, M.K., Fouragnan, E., Folloni, D., Klein-Flügge, M.C., Chau, B., [Khamassi, M.](#) and Rushworth, M.F.S. (2020). Global reward state affects learning, the raphe nucleus, and anterior insula in monkeys. **Nature Communications**. To appear.

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- Khamassi, M. and Girard, B. (2020). Modeling awake hippocampal reactivations with model-based bidirectional search. **Biological Cybernetics**, 114:231-248.
- Zaraki, A.\* , Khamassi, M.\*, Wood, L., Lakatos, G., Tzafestas, C., Amirabdollahian, F., Robins, B. and Dautenhahn, K. (2019). A novel reinforcement-based paradigm for children to teach the humanoid Kaspar robot. **International Journal of Social Robotics**, 12(3):709-720. (\*equally contributing authors)
- Cinotti, F.\* , Fresno, V.\* , Aklil, N., Coutureau, E., Girard, B., Marchand, A. § and Khamassi, M. § (2019). Dopamine blockades impairs the exploration-exploitation trade-off in rats. **Scientific Reports**, 9:6770. (\* equally contributing authors) (§ equally contributing senior authors)
- Khamassi, M., Velentzas, G., Tsitsimis, T. and Tzafestas, C. (2018). Robot fast adaptation to changes in human engagement during simulated dynamic social interaction with active exploration in parameterized reinforcement learning. **IEEE Trans. Cognitive & Developmental Sys**, 10(4):881-893.
- Dollé, L., Chavarriaga, R., Guillot, A.\* and Khamassi, M.\* (2018). Interactions between spatial strategies producing generalization gradient and blocking: a computational approach. **PLoS Computational Biology**, 14(4):e1006092. (\* equally contributing authors)
- Lee, B., Gentry, R., Bissonette, G.B., Herman, R.J., Mallon, J.J., Bryden, D.W., Calu, D.J., Schoenbaum, G., Coutureau, E., Marchand, A., Khamassi, M. and Roesch, M.R. (2018). Manipulating the revision of reward value during the intertrial interval increases sign tracking and dopamine releases. **PLoS Biology**.
- Palminteri, S., Khamassi, M., Joffily, M. and Coricelli, G. (2015). The neural computation of value contextualization in reward and punishment learning. **Nature Communications**, 6:8096.
- Khamassi, M., Quilodran, R., Enel, P., Dominey, P.F. and Procyk, E. (2015). Behavioral regulation and the modulation of information coding in the lateral prefrontal and cingulate cortex. **Cerebral Cortex**.
- Lesaint, F., Sigaud, O., Flagel, S.B., Robinson, T.E. and Khamassi, M. (2014). Modelling individual differences observed in Pavlovian autoshaping in rats using a dual learning systems approach and factored representations. **PLoS Computational Biology**, 10(2):e1003466.

## 10 selected invited talks:

- 2018: Computational Psychiatry Workshop, Cambridge University, **Cambridge, UK**
- 2018: 6<sup>th</sup> Intern. Meeting on Comp. Properties of Prefrontal Cortex (Plenary), **Vanderbilt Univ, USA**
- 2017: Panel at the 50<sup>th</sup> Winter Conference on Brain Research, **Big Sky, USA**
- 2016: “Addiction, in theory” meeting, Gatsby Unit, University College London, **London, UK**
- 2016: 6<sup>th</sup> International Symposium on Motivational and Cognitive Control (Plenary), **St Andrews, UK**
- 2016: 6<sup>th</sup> International Symposium on Biology of Decision-Making (Plenary), **Paris, France**
- 2015: 3<sup>rd</sup> International Conference on Cognition, Brain & Computation (Plenary), **Ahmedabad, India**
- 2014: Symposium at International Cognitive Neuroscience Conference, **Brisbane, Australia**
- 2013: Harvard Summer Program in Trento, Center for Mind/Brain Sciences, **Trento, Italy**
- 2012: Neuromorphic Engineering Summerschool/Workshop, **Telluride, USA**

## 5 selected collaborative research projects:

- 2017-2019 **CNRS “Osez l’Interdisciplinarité”** – “ROBAUTISTE: Learning and joint attention in autism” (role: PI with Mohamed Chetouani, Ouriel Grynszpan, Matthew Rushworth, Jérôme Sallet, Olivier Sigaud) – Total: 150 K€ (for the team)
- 2016-2019 **ANR-NSF Collaborative Research in Computational Neuroscience** – “Neurobehavioral assessment of a computational model of reward learning” (role: co-PI with Matt R. Roesch (PI), Alain Marchand) – Total: 670 K\$ (123 K\$ for the team)
- 2015-2018 **European Union H2020-ICT-2014** – “DREAM: Deferred Restructuring of Experience in Autonomous Machines” (role: participant with Stéphane Doncieux (PI) et al.) – Total: 2784 K€ (758 K€ for the team)
- 2015-2016 **Sorbonne-Universités ANR-11-IDEX-0004-02 Idex SUPER SU-15-R-PERSU-14 PERSU** – “ROBOT PARALLEARNING, Neuro-inspired coordination of parallel learning processes in robots” (role: PI) – Total direct costs: 70 K€ (for the team)
- 2013-2016 **Agence Nationale de la Recherche ANR-12-CORD-0030 (CONTINT)** – “ROBOERGOSUM, Robot Self-Awareness” (role: co-PI with Rachid Alami, Benoît Girard, Raja Chatila (PI)) – Total direct costs: 422 K€ (258 K€ for the team)