

# 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>	Permanent Researcher (CRCN) at Centre National de la Recherche Scientifique (CNRS), section 7 “Information Sciences” and interdisciplinary comity 51 “Modeling and Analysis of Biological Data and Systems”
<u>Affiliation</u>	Institute of Intelligent Systems and Robotics CNRS / Sorbonne Université BC173, 4 place Jussieu, 75005 Paris
<u>Other current positions</u>	Director of Studies, Cogmaster program at 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 Visiting Academic at Department of Experimental Psychology, Univ. Oxford, UK Associate Editor for Frontiers in Neurorobotics and Intellectica
<u>Education</u>	2014 HDR (Habilitation to Direct Researches), UPMC, Paris, France 2007 PhD in Cognitive Neuroscience, 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>	2014-2017 CR1 CNRS Permanent Researcher, ISIR, UPMC, Paris, France 2013-2015 Visiting Researcher, Center for Mind/Brain Sciences, U Trento, Italy 2010-2014 CR2 CNRS Permanent Researcher, ISIR, UPMC, Paris, France 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, UPMC, Paris, France 2003-2007 PhD student, Collège de France, Paris, France
<u>Invited talks</u>	45 invited talks (including 16 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 8 international top-level meetings on decision-making, including yearly Symp. on Biology of Decision-Making (200 participants, 80 posters, 30 talks), 14 one-day national symposia on Robotics & Neuroscience (40 participants).
<u>Student supervision</u>	Supervised 6 completed PhDs; 2 ongoing ones; 2 postdocs; 27 Master/Eng students.
<u>Publication record</u>	37 journal articles, 2 edited journal special issues, 20 peer-reviewed international conference papers, 4 book chapters incl. MIT Press, Oxford Univ Press, 74 other pub.
<u>Awards</u>	3 best paper awards (La Recherche 2010; SAB 2012; IEEE RO-MAN 2018).
<u>Teaching</u>	2 created courses (Robotics at Cogmaster program at ENS; Critical thinking at UPMC); Annual invited courses at Polytechnique, ENS, UPMC, U Orsay, U Lyon 1.
<u>Other responsibilities</u>	Member of the executive committee of the SMART Labex, 8 years / 5M€ transverse laboratory gathering 8 UPMC research institutes, including ISIR (since 2012); Evaluation comity member for 3 assistant professor recruitments at UPMC, Univ. Cergy-Pontoise and Univ. Lorraine; Examiner/Reviewer for 18 PhD theses evaluation committees (incl. 1 as president of the jury), 2 Habilitation to Direct Research committees, and 11 mid-term PhD theses committees.

### 10 selected publications (*PhD supervisors [Sidney I. Wiener, Agnès Guillot] in italic letters*):

Velentzas, G., Tsitsimis, T., Rano, I., Tzafestas, C. and [Khamassi, M.](#) (2018). Adaptive reinforcement learning with active state-specific exploration for engagement maximization during simulated child-robot interaction. **Paladyn Journal of Behavioral Robotics**. To appear.

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- 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 Transactions on Cognitive and Developmental Systems**.
- 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)
- 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.
- Caluwaerts, K., Staffa, M., N'Guyen, S., Grand, C., Dollé, L., Favre-Félix, A., Girard, B. and Khamassi, M. (2012). A biologically inspired meta-control navigation system for the Psikharpx rat robot. **Bioinspiration & Biomimetics**, 7(2):025009.
- Khamassi, M., Lallée, S., Enel, P., Procyk, E. and Dominey P.F. (2011). Robot cognitive control with a neurophysiologically inspired reinforcement learning model. **Frontiers in Neurobotics**, 5:1.
- Benchenane, K., Peyrache, A., Khamassi, M., *Wiener, S.I.* and Battaglia, F.P. (2010). Coherent theta oscillations and reorganization of spike timing in the hippocampal-prefrontal network upon learning. **Neuron**, 66(6):921-936.
- Peyrache, A., Khamassi, M., Benchenane, K., *Wiener, S.I.* and Battaglia, F.P. (2009). Replay of rule-learning related neural patterns in the prefrontal cortex during sleep. **Nature Neuroscience**, 12(7):919-926.

## 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, **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: Neuomorphic 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)

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