Mehdi Khamassi

Short CV

Tenured Research Scientist (CR1 CNRS)
Institute of Intelligent Systems and Robotics (ISIR)
Université Pierre et Marie Curie (UPMC) – BC 173
4 place Jussieu, 75005 Paris, France
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Webpage & full CV	http://people.isir.upmc.fr/khamassi
Researcher IDs	Scholar Page, Orcid 0000-0002-2515-1046, Scopus 6508136456
Date/place of birth	18 Jan. 1980 in Paris, France
Current position	CR1 Centre National de la Recherche Scientifique (CNRS), section 7 "Information Sciences" and interdisciplinary comity 51 "Modeling and Analysis of Biological Data and Systems"
Affiliation	Institute of Intelligent Systems and Robotics (ISIR) CNRS / Université Pierre et Marie Curie (UPMC) BC173, 4 place Jussieu, 75005 Paris
Other current positions	Director of Studies for the Cogmaster program at Ecole Normale Supérieure, Paris Co-animator of the "Robotics&Neuroscience" national working group (CNRS GDR) Visiting Researcher at National Polytechnical University of Athens, Greece Visiting Researcher at Department of Experimental Psychology, Oxford Univ., UK Associate Editor for Frontiers in Neurorobotics and Intellectica
Education	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, ENSIIE, Evry, France
Research Experience	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 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
Invited talks	39 invited talks (including 13 at international conf/symp/colloq, 2 keynotes)
Project experience	PI of Sorbonnes Universités Robot-Parallearning Project (2015-2016); Co-PI of several national (ANR, CNRS) and internationals (ANR-NSF, Royal Society-CNRS) projects; Participant to 5 EU projects and numerous national ones.
Event organization	Co-organizer of 6 international top-level meetings on decision-making, including yearly Symp. on Biology of Decision-Making (200 participants, 80 posters, 30 talks), 8 one-day national symposia on Robotics & Neuroscience (50 participants).
Student supervision	Supervised 4 completed PhDs; 3 ongoing ones; 1 post-doc; 19 Master/Eng students.
Publication record	26 journal articles, 1 edited journal special issue, 16 peer-reviewed international conference papers, 4 book chapters incl. MIT Press, Oxford Univ Press, 57 other pub.
Awards	2 best paper awards (International SAB Conf 2012; La Recherche Prize 2010).
Teaching	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.
Other responsibilities	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 associate professor recruitments at UPMC / CNRS, Univ. Cergy-Pontoise / ENSEA and Univ. Lorraine / INRIA; President of the jury for 1 PhD thesis evaluation committee, Examiner/Reviewer for 10 PhD theses evaluation committees, 1 Habilitation to Direct Research evaluation committee, and 7 mid-term PhD theses evaluation committees.

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

Renaudo, E., Girard, B., Devin, S., Alami, R., Clodic, A., Chatila, C. and Khamassi, M. Can robots learn behavioral habits? Coordination of model-based and model-free reinforcement learning in a robot neuro-inspired cognitive architecture. Submitted to **Frontiers in Neurorobotics**.

Khamassi, M., Girard, B., Clodic, A., Devin, S., Renaudo, E., Pacherie, E., Alami, R. and Chatila, R. (2016). Integraton of action, joint action & learning in robot cognitive architectures. **Intellectica**, 65(1):169-203.

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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**, 25(9):3197-218.

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.

Khamassi, M., Enel, P., Dominey, P.F. and Procyk, E. (2013). Medial prefrontal cortex and the adaptive regulation of reinforcement learning parameters. **Progress in Brain Research**, 202:441-464.

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 Psikharpax rat robot. **Bioinspiration & Biomimetics**, 7(2):025009.

Khamassi, M. and Humphries, M.D. (2012), Integrating cortico-limbic-basal ganglia architectures for learning model-based and model-free navigation strategies, **Frontiers in Behav. Neuroscience**, 6-79.

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 Neurorobotics**, 5:1.

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:

2017: Panel at the 50th Winter Conference on Brain Research, **Big Sky, USA**
2016: "Addiction, in theory" meeting, Gatsby Unit, University College London, **London, UK**
2016: 6th International Symposium on Motivational and Cognitive Control (Plenary), **St Andrews, UK**
2016: 6th International Symposium on Biology of Decision-Making (Plenary), **Paris, France**
2015: 3rd International Conference on Cognition, Brain & Computation (Plenary), **Ahmedabad, India**
2015: International Conf. on Computational Intelligence (Keynote), **Visakhapatnam, India**
2015: International Conf. on Cognition in Smart Cities (Keynote), **Vizag, 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:

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)

2011-2015 **Agence Nationale de la Recherche** ANR-11-BSV4-006 – "Learning Under Uncertainty" (role: co-PI with Paul Apicella, Etienne Coutureau, Benoît Girard, Alain Marchand, Emmanuel Procyk (PI)) – Total direct costs: 616 K€ (73 K€ for the team)