



Pierre-Yves Oudeyer

Curriculum Vitae

<http://www.pyoudeyer.com>

Short Bio

Dr. Pierre-Yves Oudeyer is Research Director at Inria and head of the Inria and Ensta-ParisTech FLOWERS team (France). Before, he has been a permanent researcher in Sony Computer Science Laboratory for 8 years (1999-2007). He studied theoretical computer science at Ecole Normale Supérieure in Lyon, and received his Ph.D. degree in artificial intelligence from the University Paris VI, France. After working on computational models of language evolution, he is now working on developmental and social robotics, focusing on sensorimotor development, language acquisition and life-long learning in robots. Strongly inspired by infant development, the mechanisms he studies include artificial curiosity, intrinsic motivation, the role of morphology in learning motor control, human-robot interfaces, joint attention and joint intentional understanding, and imitation learning. He has published a book, more than 80 papers in international journals and conferences, holds 8 patents, gave several invited keynote lectures in international conferences, and received several prizes for his work in developmental robotics and on the origins of language. In particular, he is laureate of the ERC Starting Grant EXPLORERS. He is editor of the IEEE CIS Newsletter on Autonomous Mental Development, and associate editor of IEEE Transactions on Autonomous Mental Development, Frontiers in Neurorobotics, and of the International Journal of Social Robotics. He is also working actively for the diffusion of science towards the general public, through the writing of popular science articles and participation to radio and TV programs as well as science exhibitions. Web: <http://www.pyoudeyer.com> and <http://flowers.inria.fr>

Professional experience

2008 – present: Research director (DR2), Inria, France; Head of the FLOWERS research Laboratory at Inria and Ensta ParisTech, and PI of [ERC Grant EXPLORERS](#).
2004 – 2007: Co-creator and animator of the “[Developmental Robotics group](#)” in Sony Computer Science Laboratory, Paris.
2003 – 2007: Permanent research scientist in [Sony Computer Science Laboratory](#), Paris.
1999-2003: Member of the “Language group” in Sony CSL Paris.
1999 – 2003: Associate Research scientist in [Sony Computer Science Laboratory](#), Paris.
1998 – 1999: Research internship in Sony Computer Science Laboratory, Paris.
1998: Research internship in the [Artificial Intelligence Laboratory](#) of the Vrije Universiteit Brussels.
1997: Research internship in the [MAGMA Laboratory](#), INPG, Grenoble.

Educational training **2000 – 2003:** PhD in computer science, university Paris VI and Sony Computer Science Lab de Paris, **obtained with highest honors** (avec félicitations du jury), 17 dec. 2003.
1999 – 2000 : Graduate studies in artificial intelligence and pattern recognition, **University Paris VI.**
1997 – 2000 : **Ecole Normale Supérieure de Lyon**, theoretical computer science diploma (magistère informatique et modélisation), obtained with **highest honours, ranked 1st** in 1998 and 1999.

Publications, talks and patents Author of more than **100 publications** in international journals, book chapters and international conferences, and of a book presenting a computational model of the origins of speech, published by Oxford University Press, also published in French (“Aux sources de la parole”, éditions Odile Jacob, 2013). The complete list of publications is available at: <http://www.pyoudeyer.com/publications/>

Google Scholar: <https://scholar.google.com/citations?user=gCqGj4sAAAAJ&hl=en>

Speaker in more than 60 conferences and international seminars, and around 30 invited talks, including Keynote speeches at AAAI Fall Symposium, [IEEE ALife 2011](#), [AAMAS 2011](#), [Robolift 2011](#), [International Conference on Epigenetics Robotics 2009](#), [Colloque de rentrée du Collège de France, 2008](#), and [Interspeech 2007](#). The complete list of my talks is available at: <http://www.pyoudeyer.com/talks/>

Inventor or co-inventor of 8 worldwide patents, and 1 european-wide patent, concerning emotional speech synthesis and recognition, self-developing devices, robotic clicker-training, robotic body adaptation, and human-robot interfaces. Details available at: <http://www.pyoudeyer.com/patents/>

Chairing of international instances and steering committees

Collective Scientific Responsibilities **2015-present:** Chair of the IEEE CIS Technical Committee on Autonomous Mental Development: <http://cis.ieee.org/autonomous-mental-development-tc.html> (Computational Intelligence Society)

2008-present: Member of the steering committee of the IEEE ICDL-Epirob conference (2008-)

2014-2015: Member of the steering committee of fOSSa 2014 and fOSSa 2015 conference.

Team responsibilities

2008-present: Scientific responsible of INRIA-Ensta-ParisTech EPC (FLOWERS team, 35 members), <http://flowers.inria.fr>

Editorial responsibilities

2008-present: Editor of [IEEE CIS Newsletter on Autonomous Mental Development](#) twice a year I entirely organize a scientific debate (dialog) by soliciting a well-known researcher on a specific topic, then inviting other key researchers (typically 6) to respond and editing and coordinating their contributions. This newsletter is the main electronic communication channel in the developmental robotics community, and is distributed to a dedicated mailing list counting around 1700 subscribers. <http://www.cse.msu.edu/amdtc/amdnl/>

2008-present: Associate editor of [IEEE Transactions on Autonomous Mental Development](#) (and co-organizer of two special issues in 2009 and 2013).

2008-present: Associate editor of [Frontiers in Neurorobotics](#) (Frontiers Foundation).

2008-present: Associate editor of [International Journal of Social Robotics](#) (Springer).

International Conference organization

2015: Workshop chair of [IJCNN 2015](http://www.ijcnn.org/2015), Killarney, Ireland, <http://www.ijcnn.org/2015>

2014 : Co-organizer of [First International Symposium on Information Seeking, Curiosity and Attention](#), Bordeaux, France.

2012: Co-organization of the 3rd International Workshop on Human Behavior Understanding (co-organizer, submitted to IROS 2012).

2011: Publicity co-chair of the IEEE ICDL-Epirob 2011, Frankfurt, Germany.

2006-2010: Co-organizer of the 6th International Conference on Epigenetic Robotics – Epirob 2006 (general and program co-chair), the 9th International Conference on Epigenetic Robotics –[Epirob 2009](#) (program co-chaor), [IEEE ICDL 2009](#) and [IEEE ICDL-Epirob 2011](#) (publicity co-chair), the [Sony CSL Paris 10th anniversary symposium and exhibition](#), and the Sony CSL Paris 2006 Technology Promotion Event.

International Conferences program committees

2010-present: Member of **international conference program committees**, including [IEEE CEC 2012](#), IEEE ICDL-Epirob 2012, 2013, 2014, 2015, IEEE ICDL [2010](#), [2011](#); Epirob [2010](#); IROS 2011; 2012, 2013; ICRA 2013; IEEE ICDL 2009, 2010, 2011; Epirob 2005, 2006, 2007, 2008, 2009, 2010; IEEE CEC'09; IEEE Alife 2009; ABiALS 2008; IVA 2008; Artificial Life XI, 2008; AAAI Spring Symposium on Creative Intelligent Systems; IAS-9, 2007; PPSN, 2002, 2003, 2004.

International Journals reviewer

2002-present: Reviewer for international journals IEEE T-RO, IEEE Transactions on TAMD, Frontiers in Neurorobotics, International Journal of Social Robotics, International Journal on Humanoid Robotics, Speech Communication, Journal of Phonetics, IEEE Transactions on Audio, Speech and Language Processing, IEEE Transactions on Evolutionary Computation, IEEE Transactions on Circuits and Systems (TCAS-2), Connection Science, Artificial Intelligence Journal, Artificial Life, Adaptive Behavior, International Journal of Humanoid Robotics.

Expertise and other committees

2005-present: Regular expert and reviewer for European Commission FP7 ICT, H2020 and FET programs (selection of projects to be funded and yearly reviews of funded projects in robotics, machine learning, language processing, assistive technologies).

2010-present: Expert for the ANR (French national research agency) for robot-related projects.

2011: Member of “jury d’admissibilité” for CR2/CR1 competition, Inria Bordeaux Sud-Ouest.

2011: Member of “jury de recrutement MdC Chaire d’Excellence”, Université de Cergy-Pontoise.

2011: Member of Jury “Prime d’excellence scientifique (PES CR)”, INRIA.

2010-present: Member of “Comité des projets”, INRIA Bordeaux Sud-Ouest.

2010-2014: Member of “Commission Développement Technologique (CDT)”, INRIA Bordeaux Sud-Ouest.

2010-present: Jury of 6 PhD thesis

At Inria:

2011: Member of Jury “Prime d’excellence scientifique (PES CR)”, INRIA.

2009: Secrétaire and member of “Groupe de réflexion sur la création potentielle d’un comité d’éthique à l’INRIA” (Committee for thinking about the potential creation of an ethical committee at INRIA).

2008-present: Member of “Comité des projets”, INRIA Bordeaux Sud-Ouest.

2008-2014: Member of “Commission Développement Technologique (CDT)”, INRIA Bordeaux Sud-Ouest.

2008-2012: Member of “Groupe de travail Culture Scientifique”, INRIA Bordeaux Sud-Ouest.

Management of teams and projects

2008 – present: Management of the FLOWERS INRIA team (created from scratch in 2008). In jan. 2011, the [FLOWERS team](#) has 20 members.

2009 – 2014: Principal investigator of the European Research Council Starting Grant Project EXPLORERS (1.5 million euros).

2009-2011: Principal investigator of Region Aquitaine project “DEVROB” (130 keuros)

2010-2012: Principal investigator of Region Aquitaine project “ACROBATE” (130 keuros)

2009-2010: Principal investigator of “Action de développement technologique (ADT INRIA)” (“Development of interoperable and combinable software tools and interfaces for natural human-robot interaction »).

2010-2012: Co-investigator of “Action de développement technologique (ADT INRIA)” (“Acrodev”).

2011-2013: Workpackage leader of ANR MACSi project.

2003-2007: Co-creator and animator of the Developmental Robotics group, Sony CSL Paris.

Awards

2014: Best Paper Award, category Models of Cognitive Development, IEEE ICDL-Epirob International conference (with Clément Moulin-Frier)

2014: Finaliste du prix Tangente des livres de vulgarisation scientifique (pour mon livre Aux Sources de la Parile, Editions Odile Jacob)

2012: Best Paper Award, category Models of Cognitive Development, IEEE ICDL-Epirob International conference (with Clément Moulin-Frier)

2011: IEEE ICDL-Epirob Second Best Student [Paper](#) award (with M. Nguyen and A. Baranes as student authors), awarded by ICDL-Epirob Conference.

2009: [ERC Starting Grant EXPLORERS](#), awarded by the [European Research Council](#).

2009: [IEEE ICDL Best student paper award](#) (with T. Schatz as student author)

2005: Together with Frédéric Kaplan, I was awarded the **Implemented Invention Award (4th prize) by Sony Corporation**, for our US patent No. 6760645 "Taming robots with clicker training".

2005: [Prize “ASTI 2005”](#) for the best pluridisciplinary 2003-2004 PhD thesis in the sciences and technologies of information and communication in France.

2004: [Prize « Le Monde de la recherche universitaire »](#), which honours every year the 15 best PhD theses in French in all exact scientific domains.

2001: [“Best application paper”](#), awarded at Int. Conf. on Artificial Evolution, 2001.

2000: **Best paper award in Sony Technical Forum 2000**, which is the yearly worldwide conference that gathers the engineers of Sony Corporation.

Teaching

2008 –2009: Irrcyn, Nantes, EMARO European Master on Advanced Robotics, “Social and developmental robotics”, 15 hours/year.

2006 – present: ENSTA, Paris, 3rd year engineering diploma, “Concepts and Algorithms for Social and Entertainment Robots” (creation of the first course in developmental and social robotics in France, one of the first in Europe), 24.5 hours/year.

+ regular punctual courses in several French universities and engineering schools.

Technology transfer and innovation

2013-present: Head of the team who designed, developed and disseminated the Poppy Platform, which is the first complete open-source 3D printed humanoid platform in the world, for education, science and art: <http://www.poppy-project.org>

Poppy has been presented in highly visible and prestigious wide audience venues (François Hollande at Elysée, Axelle Lemaire in Bordeaux, Sénat, Le Web conference, Tedx Cannes), in numerous high quality media/press articles (full pages in Le Monde, Les Echos, Libération, interviews on France Inter, France Info as well as in international press

such as Scientific American, El Mundo, Japanese TV, <https://www.poppy-project.org/in-the-press/>). It was featured in the report of “[Stratégie Nationale de Recherche France 2020](#)”.

2009: Co-laureate of OSEO competition in “Emergence” category for the project of creation of a start-up company in robotics.

2005 – 2007: Collaboration with Sony Playstation Europe (SCEE London and Cambridge) for the integration of my emotional speech synthesis technology (with associate patents, see patent section) into the standard audio libraries of Playstation 3.

2002: Collaboration with the Speech and Audio group of the R&D department of Sony in Tokyo: the emotional speech synthesis technology I developed (see patents) were adapted and included in the Sony Qrio humanoid robot speech system.

1999 – 2006: Extensive collaborations with the Digital Creature Lab. from Sony in Tokyo, where the AIBO and Qrio robots were created. This allowed the transfer of a technology of playful interactions, called “clicker-training”, that I invented together with Frédéric Kaplan (and associated with a patent). The technologies of artificial curiosity and the thinking we developed were also crucial in the conception process of the Qrio robot.

Popular Science I have been strongly involved in popular science activities, involving regular writing of popular science articles, participation to wide audience radio and tv programs and intervention in the press to address scientific issues (e.g. Le Monde, Les Echos, France Inter, France Info, France Culture, ...), participation to science festivals and museum exhibitions, and in particular coordinated the Ergo-Robot experiment, made in collaboration with moviemaker David Lynch, organized for 5 months during the exhibition « Mathematics : a Beautiful Elsewhere » at Fondation Cartier, Paris (50k visitors, <https://flowers.inria.fr/robots/ergo-robots/>). I have also given in 2014 a TedX talk (<https://www.youtube.com/watch?v=AP8i435ztwE> , video viewed by more than 9000 people).

Selected list of popular science articles, videos and events:
<http://www.pyoudeyer.com/popular-science/>
Selected list of interventions in the press: <http://www.pyoudeyer.com/press/>

Funding ID

2010: I obtained 111 keuros from French ANR project MACSi.

2010: I obtained 180 keuros from INRIA ADT for funding two two-year engineers, project ACRODEV.

2010: I obtained 105 keuros from INRIA CORDI/S for funding one PhD student.

2009: I obtained 1.5 million euros from ERC Starting Grant EXPLORERS.

2009: I obtained 105 keuros from Aquitaine Regional Research Agency and INRIA, project ACROBATE.

2008: I obtained 120 keuros from INRIA’s direction of research under the “exploratory action” programme, dedicated to support young investigators for new high-potential/high-risk research projects in INRIA. This was used to recruit a PhD student.

2008: I obtained 90 keuros from INRIA ADT for funding one two-year engineer, project DEVROB.

2008: I obtained 105 keuros from Aquitaine Regional Research Agency and INRIA, to fund a PhD student for a project targeted at the development of natural and intuitive interfaces for human-robot interaction.

