Curriculum Vitæ (2021)

Vincent Hayward, Professeur, 1re classe, Section 61
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Education

1978–81 Thèse de Docteur Ingénieur, Université de Paris XI at Orsay, France
1975–78 Diplôme d'Ingénieur, Ecole Centrale de Nantes (then ENSM), Nantes, France

Employment

2019– *Professeur*, Institut des Systèmes Intelligents et de Robotique, Sorbonne Université (half-time)
2017– *Chief Scientific Officer*, Actronika SAS, Paris (half-time)
2017–18 *Professor of Tactile Perception and Technologies*, School of Advanced Study, University of London (half-time)
2011–16 *Professeur* (on secondment 2017 et 2018) Institut des Systèmes Intelligents et de Robotique, Sorbonne Université
2008–11 *Professeur* (associé), Institut des Systèmes Intelligents et de Robotique, Université Pierre et Marie Curie (UPMC)
2006–10 *Professor*, Department of Electrical and Computer Engineering, McGill University, Montréal, Qc Canada
2006–07 *Professeur Invité*, Université Pierre et Marie Curie
2001–04 *Director*, Center for Intelligent Machines, McGill Univ., Montréal, Qc Canada
1989–06 *Assistant then Associate Professor* (tenured '94), Dept. of Elec. & Comp. Eng., McGill Univ., Montréal, Qc Canada
1983–85 *Attaché* then *Chargé de Recherche* at the Centre National de la Recherche Scientifique (CNRS)
1981–83 *Visiting Scholar and Assistant Professor*, Purdue University, School of Electrical Engineering, Indiana, USA

Ten representative articles

- Miller, L. E., Montroni, L., Koun, E., Salemme, R., Hayward, V., Farné, A. 2018. Sensing With Tools Extends Somatosensory Processing Beyond The Body. *Nature*, 561(7722):239–242.
- Dzidek, B., Bochereau, S., Johnson, S. A., Hayward, V., and Adams, M. J. 2017. Why Pens Have Rubbery Grips. *Proceedings of the National Academy of Sciences*, 114(41):10864–10869.
- Deroy, O., Fasiello, I., Hayward, V., Auvray, M. 2016. Differentiated Audio-Tactile Correspondences in Sighted and Blind Individuals. *Journal of Experimental Psychology: Human Perception and Performance*, 42(8):1204–1214.
- Shao, Y., Hayward, V., Visell, Y. 2016. Spatial Patterns of Cutaneous Vibration During Whole-Hand Haptic Interactions, *Proceedings of the National Academy of Sciences*, 113(15):4188–4193
- Dupin, L., Hayward, V. Wexler, M. 2015. Direct Coupling of Haptic Signals Between Hands. *Proceedings of the National Academy of Sciences*, 112(2):619–624.
- Jörntell, H., Bengtsson, F., Geborek, P., Spanne, A., Terekhov, A. V., Hayward, V. 2014. Segregation of Tactile Input Features in Neurons of the Cuneate Nucleus. *Neuron*. 83:1444–1452.
- Bochereau, S., Terekhov, A. V., Hayward, V. 2014. Amplitude And Duration Interdependence in the Perceived Intensity of Complex Tactile Signals. Proceedings of *Eurohaptics*, pp. 93-100.
- Wiertlewski, M., Lozada, J., Hayward, V. 2011. The Spatial Spectrum Of Tangential Skin Displacement Can Encode Tactual Texture. *IEEE Transactions on Robotics*, 27(3):461–472.
- Konkle, T., Wang, Q., Hayward, V., and Moore, C. I. 2009. Motion After-Effects Transfer Between Touch and Vision, *Current Biology*, 19(9):745–750.
- Hayward, V. and K. E. MacLean, V. 2007. Do it yourself haptics, Part-I. *IEEE Robotics and Autom. Magazine*, 14(4):88–104.

Research Contributions

orcid.org/0000-0002-2102-1965. 100+ articles in journals (*Nature* (2), *Current Biology* (4), *PNAS* (3), *Neuron* (1), *Royal Society Journals*, *Scientific Reports*, *Plos ONE*) 23 chapters in books, 160 papers in conference proceedings, 38 patents, 60+ invited lectures in the past 10 years; h-index: 62 (Google Scholar), 41 (Scopus). More than 30 mentions in the press including *Wired Magazine* (2015), "Big Data: The Next Google" *Nature* Vol. 455 (2008), *The New Scientist* (thrice), or *The Economist* (2007).

Active Research Grants

2019–22 *Innovative Network for Training in Touch Interactive Interfaces* H. Jörntell (Coordinator), R. Dahiya, V. Hayward, E. Burdet (PIs), plus 10 industry associates , H2020 Marie Skłodowska-Curie Innovative Training Networks (ITN).

2019–22 *Predictive Haptic Coding Devices in Next Generation Interfaces* (ph-coding). H. Jörntell (Coordinator), E. Burdet, R. Dahiya, V. Hayward (PIs), H2020 Research and Innovation action, FET Open project, 225,000 €/year of 1,000,000 €/year.

2018–21 *Mixed Haptic Feedback for Mid-Air Interactions in Virtual and Augmented Realities* (H-Reality). M. J. Adams (Coordinator), S. A. Seah, V. Hayward, J. Hartcher-O'Brien, C. Pacchierotti (PIs), H2020 Research and Innovation action, FET Open project, 200,000 €/year of 1,000,000 €/year.

2018–19 *Distal projection of tactile sensations from oculomotor signals*, Research Contract, Oculus VR, US$ 117,000.

2016–20 *Developmental trajectories of sensorimotor control of mechanical tools*, L'Agence nationale de la recherche, (Developmental_Tool_Mastery), A. Farné (Coordinator), A. Roy, V. Hayward, F. de Vignemont (PIs). 35,100 €/year of 151,000 €/year.

Awards and Distinctions (partial)

2021 Keynote speaker, International Multisensory Research Forum, Ulm, Germany (postponed).
2019 Elected member of the French Academy of Sciences.
2019 Grand Prix Inria de L'Académie des Sciences, Paris (25,000 €)
2019 Keynote Speaker, International Conference on Virtual Rehabilitation, Tel Aviv, Israel
2018 Best Demonstration Award, EuroHaptics Conference, Pisa, Italy.
2018 Keynote, Workshop on active touch for perception and interaction, ICRA 2018, Brisbane, Australia
2018 Keynote Speaker, Cross-Cutting Challenges, IEEE Haptics Symposium, San Francisco, CA, USA
2018 Best Paper Award for 2017, IEEE Transactions on Haptics
2018 Keynote Speaker, UK & Ireland IEEE Robotics and Automation Conference, London, UK
2017 Plenary Speaker, 43rd International Conference On Micro And Nano-engineering, Braga, Portugal
2017 Keynote Speaker, IEEE/RSJ International Conference on Intelligent Robots and Systems, Vancouver, BC, Canada
2017 Leverhulme Trust Visiting Professorship, University of London (£ 169,000)
2016 Keynote Speaker, Handicap 2016, Paris, France
2015 Best Paper Award (honorable mention), World Haptics 2015, Chicago, USA.
2014 Invited Speaker, AsiaHaptics 2014, Tsukuba, Japan
2014 Best Paper Award (poster presentation) Eurohaptics 2014, Versailles, France
2014 Best Paper Award (honorable mention, oral presentation) Eurohaptics 2014, Versailles, France
2013 Distinguished Lecture Series, Department of Computing Science, University of British Columbia, Canada
2012 Plenary Speaker 2012 IEEE Int. Conf. on Multisensor Fusion and Information Integration, Hamburg, Germany
2012 Lecturer, Series 'Robotique, les fondations d'une discipline', Collége de France, Paris
2010 Keynote Speaker, Haptic Audio Interaction Design 2010, Copenhagen, Denmark
2010 Plenary Speaker, 32nd Annual Int. Conf. of the IEEE Engineering in Med. and Bio. Society, Buenos Aires, Argentina
2010 Keynote Speaker, Joint European Meering, EuroVR-EVE, Orsay, France
2010 Best Paper Award, Eurohaptics, Amsterdam, the Netherlands
2009 Lectio Magistralis, University of Verona, Verona, Italy
2008 Elected Fellow of the IEEE
2007 Lecturer, The Cutting Edge: Royal Society Lectures in Science, McGill University
2007 Best Paper Award (applications), World Haptics 2007, Salt Lake City, Utah, USA
2006 Keynote Speaker, 8th International IFAC Symposium on Robot Control, SYROCO 2006, Bologna, Italy
2006 Best Demonstration Award, Eurohaptics 2006, Paris
2006 Best Paper Award, ACM CHI'06 Conference, Montréal, Canada
2006 Best Paper Award, 14th Symposium on Haptic Interfaces For Virtual Environ. & Teleop. Syst., Arlington, USA
2005 Keynote Lecture, Dutch-Belgium Haptics Society, Bruxels, Belgium
2004 Keynote Speaker, Eurohaptics, Munich, Germany
2003 Outstanding Reviewer for Automatica, Journal of the International Federation of Automatic Control
2002 The E. (Ben) & Mary Hochhausen Award for Res. in Adaptive Tech. For Blind and Visually Impaired ($ 10,000)
2001 Plenary Speaker, Workshop On Advances In Interactive Multimodal Telepresencesystems, Munich, Germany
2000 Distinguished Lecture Series, Department of Computing Science, University of Alberta, Canada
1995 Best Demonstration Award, 1995 IRIS-PRECARN Conference, Ottawa, Canada
1991 NASA Space Act Tech Brief Award (as a result of work on robot programming for the Jet Propulsion Laboratory)

Teaching at the Université Pierre et Marie Curie

2019–20 *Actionneurs en Robotique* (niveau M1), enrollment: 30 (cours = 17 H)
2009–20 *Interfaces et réalité virtuelle* (niveau M2+ROB5), enrollment: 16, 15, 10, 22 (cours = 30 H)
2009–16 *Haptics for rehabilitation* (Master International, 50%), enrollment: 14, 15, 18, 25 (cours = 18 + 4 H)
2009–16 *Asservissements numériques*, (niveau ROB4) enrollment: 25, (cours + TD + TP = 20 + 17 + 8 H)

Supervision

In progress at UPMC: 3 Ph.D.; 2 Postdocs;
Completed at UPMC: 10 Postdocs; 10 Ph.D.; 11 Masters; 7 Research Engineers
Rest of career: 6 Postdocs; 17 Ph.D.; 18 Masters

Numerous other activities among which

2007–11 Associate Editor, *IEEE Transactions on Haptics*
2007–14 Associate Editor, *ACM Transactions on Applied Perception*
1990– Many grant evaluations has ad-hoc reviewer; panel member including NSERC, NSF, EU FP7 and others; Frequent ad-hoc reviewer for conferences and journals; Co-founder of four start-ups and consultancy for high-tech companies.

Event Organization (brief selection)

2014 General Chair of Eurohaptics 2014, 24–27 June 2014, Versailles, France. The event attracted 270 international participants as well as eleven industry sponsors..
2013 Co-organized with Jonathan Platkiewicz the first "Workshop on Early Touch" at the Computational Neuroscience Meeting, July 17, 2013, Université Paris Descartes, Paris, France.
2006 Co-organized, together with Prof. J. M. Hollerbach (Univ. of Utah) the *IEEE-RAS/IFRR School of Robotics Science on Haptic Interaction*. The school hosted 35 Ph.D/Post-doctoral students from across the world.