

Academic Qualifications

B.A., B.A.I. (1979), Ph.D. (1985), M.A., (1986), The University of Dublin, Trinity College, Ireland.

Professional Qualifications

Life Senior Member of the Institute of Electrical and Electronic Engineers (IEEE)

Chartered Engineer, FIEI: Fellow of Engineers Ireland (Institution of Engineers of Ireland)

Professional Experience

2022 - Research Professor
Carnegie Mellon University Africa, Rwanda.

2021 - 2022 Visiting Professor
Carnegie Mellon University Africa, Rwanda.

2020 - 2021 Senior Researcher
Institute for Artificial Intelligence, University of Bremen, Germany.

2017 - 2020 Teaching Professor
Carnegie Mellon University Africa, Rwanda.

2013 - 2016 Professor of Informatics
University of Skövde, Sweden.

2011 - 2013 Senior Researcher
Institute for Cognitive Systems, Technical University of Munich, Germany.

2006 - 2010 Professor of Computer Engineering, Head of Department
Khalifa University of Science, Technology and Research, UAE.

2005 - 2006 Coordinator: European Network for the Advancement of Artificial Cognition Systems
University of Genova, Italy.

2002 Senior Programme Officer
Science Foundation Ireland

1998 - 2005 Professor of Computer Engineering, Head of Department
Etisalat College of Engineering, UAE (later to become Khalifa University)

1995 - 1999 Professor of Computer Science, Head of Department
National University of Ireland, Maynooth

1991 - 1993 Scientific Officer
Commission of the European Communities, Brussels, Belgium

1983 - 1995 Lecturer and Information Services Project Officer
Trinity College Dublin, Ireland.

1979 - 1981 Software Engineer
Westinghouse Electric Corp., Pittsburgh U.S.A. and Shannon, Ireland.

Selected Offices Held

- Member of the IEEE Robotics and Automation Society committee for Diversity, Equity, and Inclusion (2024 –).
- Member of the IEEE Robotics and Automation Society committee for Women in Engineering (2022 –).
- Co-Chair Emeritus of the IEEE RAS Technical Committee for Cognitive Robotics (2014 –).
- Fellow of the German ZiF research group, Bielefeld (2019 – 2020).
- Research Fellow, Kigali Collaborative Research Centre (2017 –).
- Associate editor of Cognitive Systems Research (2015 –).
- Series editor of the Springer book series Cognitive Systems Monographs (2008 –).
- Associate editor of the IEEE Transactions on Cognitive and Developmental Systems (2015 - 2017).
- Advisory Board member, Innopolis University, Russia (2013 – 2016).
- Member of the editorial board of *Cognitive Computation* (2008 – 2013).
- Member of the editorial board of *Image and Vision Computing Journal* (2008 – 2009).
- Coordinator of the European Network for the Advancement of Artificial Cognitive Systems (2006 – 2008).
- Coordinator of the European Research Network for Cognitive Computer Vision Systems (2002 – 2005).
- General and Programme Chair of the Sixth European Conference on Computer Vision – ECCV 2000.

Selected Publications

- A. Akinade, D. Barros, and D. Vernon, "Biological Motion Aids Gestural Communication by Humanoid Social Robots", *International Journal of Humanoid Robotics*, accepted for publication, January 04, 2025.
- Vernon, D. "An African Perspective on Culturally Competent Social Robotics: Why DEI Matters in HRI", *IEEE Robotics and Automation Magazine*, Vol. 31, No. 4, pp. 170-200, December 2024.
- Vernon, D. "Cognitive Architectures", in *Cognitive Robotics*, A. Cangelosi and M. Asada (Eds.), MIT Press, Chapter 10, May 17, 2022.
- Vernon, D., Albert, J., Beetz, M., Chiou, S.-C., Ritter, H., and Schneider, W. X. "Action Selection and Execution in Everyday Activities: A Cognitive Robotics & Situation Model Perspective", *Topics in Cognitive Science*, pp. 1-19, DOI: 10.1111/tops.12569, 2021.
- Vernon, D. "Robotics and Artificial Intelligence in Africa", *IEEE Robotics & Automation Magazine*, Vol. 26, No. 4, pp. 131-135, December 2019.
- Vernon, D., von Hofsten, D. and Fadiga, L. "Desiderata for Developmental Cognitive Architectures", *Biologically Inspired Cognitive Architectures*, Vol. 18, pp. 116-127, 2016.
- Vernon, D., Billing, E., Hemeren, P., Thill, S., and Ziemke, T. "An Architecture-oriented Approach to System Integration in Collaborative Robotics Research Projects — An Experience Report", *Journal of Software Engineering for Robotics*, Vol. 6, No. 1, pp. 15-32, 2015.
- Vernon, D., Lowe, R., Thill, S., and Ziemke, T., "Embodied Cognition and Circular Causality: On the Role of Constitutive Autonomy in the Reciprocal Coupling of Perception and Action", *Frontiers in Psychology*, Vol. 6, No. 1660, 2015.
- Vernon, D. Beetz, M., and Sandini, G. "Prospection in cognition: the case for joint episodic-procedural memory", *Frontiers in AI and Robotics*, Vol. 2, 2015.
- Vernon, D. *Artificial Cognitive Systems – A Primer*, MIT Press, 2014.
- Vernon, D., von Hofsten, C., and Fadiga, L. *A Roadmap for Cognitive Development in Humanoid Robots*, Cognitive Systems Monographs (COSMOS), Springer, 2010.
- Vernon, D. "Enaction as a Conceptual Framework for Developmental Cognitive Robotics", *Paladyn. Journal of Behavioral Robotics*, Vol. 1, No. 2, pp. 89-98, 2010.
- Metta, G., Natale, L., Nori, F., Sandini, G., Vernon, D., Fadiga, L., von Hofsten, C., Santos-Victor, J., Bernardino, A., Montesano, L. "The iCub Humanoid Robot: An Open-Systems Platform for Research in Cognitive Development", *Neural Networks*, Vol. 23, pp. 1125-1134, 2010.
- Vernon, D. "Cognitive Vision: The Case for Embodied Perception", *Image and Vision Computing*, Special Issue on Cognitive Vision, Vol. 26, No. 1, pp. 127-141, 2008.
- Vernon, D., Metta, G., and Sandini, G. "A Survey of Artificial Cognitive Systems: Implications for the Autonomous Development of Mental Capabilities in Computational Agents", *IEEE Transactions on Evolutionary Computation*, Vol. 11, No. 2, pp. 151-180, 2007.
- Vernon, D. *Fourier Vision – Segmentation and Velocity Measurement using the Fourier Transform*, Kluwer Academic Publishers, Norwell, Mass., ISBN 0-7923-7413-4, 195 pages, 2001.
- Vernon, D. "Computation of Instantaneous Optical Flow using the Phase of Fourier Components", *Image and Vision Computing*, Vol. 17, No. 3-4, pp. 189-198, 1999.
- Jones, M. and Vernon, D. "Using Neural Networks to Learn Hand Eye Co-ordination", *Neural Computing and Applications*, Springer Verlag, Vol. 2, No. 1, pp. 2-12, 1994.
- Vernon, D. and Tistarelli, M. "Using Camera Motion to Estimate Range for Robotic Parts Manipulation", *IEEE Transactions on Robotics and Automation*, Vol. 6, No. 5, pp. 509-521, 1990.
- Vernon, D. *Machine Vision: Automated Visual Inspection and Robot Vision*, Prentice-Hall International (UK) Ltd., 260 pages, ISBN 0-13-543398-3, 1991.

Selected Research Projects

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| 2023-2025 | CSSR4Africa – Culturally Sensitive Social Robotics for Africa. |
| 2014-2018 | DREAM - Development of Robot-Enhanced therapy for children with Autism spectrum disorders |
| 2004-2010 | RobotCub – Robotic Open-Architecture Technology for Cognition, Understanding, & Behaviours. |
| 2006-2008 | euCognition – the European Network for the Advancement of Artificial Cognitive Systems |
| 2002-2005 | ECVision – European Research Network for Cognitive Computer Vision Systems |
| 1996-1999 | Visual Intelligent Recognition for Secure Banking Services (VIRSBS). |
| 1996-1999 | High Speed Manipulation by Random Access Vision (RAMAP). |
| 1990-1993 | Glove-like Advanced Interface for the Control of Manipulative and Exploratory Procedures |
| 1984-1989 | Image and Movement Understanding. |