

DAVID VERNON

CURRICULUM VITAE

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Last Updated: 27 October 2011

Biographical Sketch



I graduated from the University of Dublin, Trinity College, in 1979 with a degree in engineering. I began my professional career as a software engineer with Westinghouse Electric Inc. where I worked in the USA and Ireland until 1981. I left Westinghouse to pursue post-graduate research and completed my Ph.D. at Trinity College in 1985.

In 1983, I was appointed a Lecturer in the Department of Computer Science in Trinity College and worked there until 1995. From 1991 to 1993, I took a leave of absence to work as a Project Officer in the European Commission in the areas of high performance computing and software engineering.

Returning to Trinity, from 1994 to 1995 I coordinated a wide-ranging initiative on the development of a comprehensive University-wide policy on information systems, working with over one hundred people in a project involving more than of 30,000 hours of effort.

I was elected a Fellow of Trinity College Dublin in 1991.

In 1995, I was appointed to the Chair of Computer Science at the National University of Ireland, Maynooth, Ireland as Professor and Head of Department. There, I was responsible for the development and launch of new B.Sc. and M.Sc. degrees in computer science and software engineering. I resigned the Chair in December 1999.

From 1998 to 2005 I worked at Etisalat University College, UAE (later to become Khalifa University), as Professor of Computer Engineering, Head of Department, and Director of Postgraduate Studies (Acting).

In 2002, I spent a year at *Science Foundation Ireland (SFI)* as a Senior Programme Officer where I worked on the development and administration of SFI's innovative research funding programmes, with particular responsibility in the areas of computer science and software engineering.

From 2002 to 2005, I coordinated *ECVision* – the European Research Network for Cognitive Computer Vision Systems (www.ecvision.org). From 2006 to 2008 I coordinated *euCognition* – the European Network for the Advancement of Artificial Cognitive Systems (www.eucognition.org).

From 2004 to 2010, I was a member of the management team of the EU-funded RobotCub Integrated Project (www.robotcub.org), the goal of which was to develop an open-source cognitive humanoid robot. My specific responsibility was the iCub's cognitive architecture.

I was a Visiting Professor at the University of Genova in 2005 and 2006. In late 2006, I returned to the UAE as Professor of Computer Engineering at Khalifa University of Science, Technology, and Research with the specific brief to develop their post-graduate degree programmes. I left in January 2010 to seek new challenges in Europe.

At present, I work independently in research on cognitive systems and computer vision, From time to time, I work as a Visiting Professor at the Institute of Cognitive Systems, Technical University of Munich.

Over the past 25 years, I have authored three books, edited another three, and published over 100 papers, most of which have appeared in peer-reviewed international journals and conference proceedings.

I have been a reviewer for several leading journals including the *International Journal of Robotics Research*, *Artificial Intelligence*, *IEEE Trans. Robotics and Automation*, *IEEE Trans. on Evolutionary Computing*, *IEEE Trans. on Autonomous Mental Development*, *Interaction Studies*, *Optical Engineering*, *Journal of the Optical Society of America*, *Image and Vision Computing*, and *Machine Vision Applications*. I have been a member of several international conference programme committees such as ICRA, HRI, ICCV, ECCV, ICPR, ECAI, ICVS, ICDL, IMVIP, OESI, CSNLP, IROS, and CIP. Over the past twenty years, I have reviewed many European research projects and I have assisted the European Commission in several evaluations.

I was appointed to the Editorial Board of *AI Magazine* in 2007 and to the Editorial Boards of *Image and Vision Computing* and *Cognitive Computation* journals in 2008. I was appointed a Series Editor of the Springer book series *Cognitive Systems Monographs* in 2008.

In June 2000, I organized the Sixth European Conference on Computer Vision – ECCV 2000 – in Trinity College and served as both General Chair and Programme Chair. I am now a member of the Board of ECCV.

I served two terms as External Examiner at both Dublin City University and the University of Limerick and have been an external examiner for Ph.D. and M.Sc. theses at several universities, including the Royal Institute of Technology, Stockholm, Sweden; Salford University, UK; Queen's University Belfast and University of Ulster, Northern Ireland; Trinity College Dublin, Dublin City University, University of Limerick, and Cork Institute of Technology, Ireland.

I am a Senior Member of the IEEE and a Chartered Engineer of the Institution of Engineers of Ireland.

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Personal Information

Name: David Vernon
Date of Birth: 8th March 1958
Marital Status: Married, with two adult daughters
Home Address: 53, The Waterfront, Hanover Quay, Dublin 2, Ireland.
Email Address: david@vernon.eu
Website : www.vernon.eu

Qualifications

Academic Qualifications

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

Professional Qualifications

Senior Member of the Institute of Electrical and Electronic Engineers (IEEE)
Chartered Member of the Institution of Engineers of Ireland (IEI)

Honours

- External expert, European Commission, ICT for Energy Efficiency (2011).
- Invited speaker at 2nd Int. Conf. on Biologically-Inspired Cognitive Architectures (2011).
- Invited speaker at CoTeSys (Cognition for Technical Systems) Spring Workshop (2011).
- Invited contributor to the Encyclopedia of Computer Vision (2011).
- Member of the Scientific Advisory Board of Xperience – www.Xperience.org (2011).
- Keynote Address to KI-2010, the German Conference on Artificial Intelligence (2010).
- Keynote Address to International Conference on Development and Learning, Ann Arbor (2010).
- Keynote Address to 2nd EUCogII Members Conference, Zurich (2010).
- Editor of the Springer book series *Cognitive Systems Monographs* (2008 -).
- Member of the Editorial Board of *Cognitive Computation* Journal (2008 -).
- Member of the Editorial Board of *Image and Vision* Computing Journal (2008 - 09).
- Member of the Editorial Board of *AI Magazine* (2007 -).
- Senior Membership of the IEEE (2003).
- General & Programme Chairman, 6th European Conference on Computer Vision - ECCV, Trinity College Dublin (2000).
- Member of the Senate of the University of Dublin (1991).
- Fellow of Trinity College Dublin (1991).
- Chartered Member of the Institution of Engineers of Ireland (1990).
- Collen Prize for best final year engineering project, Trinity College Dublin (1979).

Interests

I am a keen road cyclist, I write software whenever I get the chance, and my Myers-Briggs Type is INFJ.

Employment History

- 2010 - **Independent Researcher: Cognitive Systems and Computer Vision**
- 2006 - 2010 **Khalifa University of Science, Technology and Research**
UAE.
Position: Professor of Computer Engineering & Head of Department
Duties: please refer to sections entitled: *Academic Experience*.
- 2005 - 2006 **University of Genova**
Italy.
Position: Coordinator of *euCognition* – The European Network for the Advancement of Artificial Cognition Systems (www.euCognition.org).
Project manager of the EU-funded *RobotCub* project (www.RobotCub.org)
Duties: Overall coordination of the scientific outlook, community outreach, and education & training activities. Coordination of research in the development of a cognitive humanoid robot, with particular responsibility for the cognitive architecture.
- 2002 **Science Foundation Ireland**
Ireland.
Position: Senior Programme Officer (Software – ICT).
Duties: Development and management of research funding programmes; liaison with the academic and industrial community.
- 1998 - 2005 **Etisalat College of Engineering (later to become Khalifa University)**
UAE.
Position: Professor of Computer Engineering, Head of Department, & Acting-Director of Postgraduate Studies.
Duties: please refer to sections entitled: *Academic Experience*.
- 1995 - 1999 **National University of Ireland, Maynooth**
Position: Professor of Computer Science and Head of Department.
Duties: please refer to sections entitled: *Experience in Strategic Planning* and *Academic Experience*.
- 1991 - 1993 **Commission of the European Communities**
DGXIII Directorate General for Information Technologies, Telecommunications and Innovation, Brussels, Belgium.
Position: Scientific Officer, Grade A6.
Duties: Co-ordination and administration of projects in the ESPRIT (European Strategic Programme for Research and Development in Information Technology); Assisted in the setting up *ESSI* – the European Systems and Software Initiative. See also section entitled: *Experience in Strategic Planning*
- 1983 - 1995 **Trinity College Dublin**
Ireland.
Position: Lecturer and Information Services Project Officer.
Duties: please refer to sections entitled: *Experience in Strategic Planning* and *Academic Experience*.
- 1981 - 1985 **Trinity College Dublin**
Ph.D. candidate.

Employment History

(continued)

1979 - 81

Westinghouse Electric Corp.,

200 Beta Drive, Pittsburgh, PA, U.S.A.

Shannon Industrial Estate, Shannon, Ireland.

Position: Systems Software Engineer; System Integrator; Project Leader.

Duties: Development of a database maintenance system for the Westinghouse Energy Management Systems (EMS).

Design of a diagnostic module for a distributed control system.

Offices Held

- Series Editor of the Springer book series Cognitive Systems Monographs (2008 -).
- Member of the Editorial Board of *Cognitive Computation* (2008 -).
- Member of the Editorial Board of Image and Vision Computing Journal (2008 - 2009)
- Member of the Editorial Board of AI Magazine, published by the AAI (2007 -).
- Guest Editor of a special issue of Image and Vision Computing on Cognitive Vision Systems, Vol. 26, No. 1, January 2008.
- Coordinator of euCognition – the European Network for the Advancement of Artificial Cognitive Systems (2006 - 2008).
- Member of the Steering Board of the Imaging Faraday Partnership, United Kingdom (2004 - 2006).
- Coordinator of ECVision – the European Research Network for Cognitive Computer Vision Systems (2002 - 2005).
- Member of the Board of the European Conference on Computer Vision ECCV (2000 -).
- General and Programme Chair of the Sixth European Conference on Computer Vision – ECCV 2000 – Trinity College Dublin (2000).
- Reviewer for various journals, including: *International Journal for Robotics Research; Artificial Intelligence, Software Practice and Experience, IEEE Transactions on Evolutionary Computing, Image and Vision Computing, Optical Engineering, Interaction Studies, IEEE Trans. on Autonomous Mental Development, Journal of the Optical Society of America, and Machine Vision Applications.*
- Member of the Programme Committee of various conferences, including:
 - Third International Workshop on Cognitive Information Processing (CIP 2012)
 - International Conference on Cognitive Systems, University of Karlsruhe, 2008
 - International Cognitive Vision Workshop (ICVW 2007)
 - Assoc. editor, IEEE/RSJ 2007 International Conference on Intelligent Robots and Systems (IROS 2007)
 - European Conference on Complex Systems (ECCS 2006, 2007)
 - IEEE-RAS International Conference on Humanoid Robots (Humanoids 2006)
 - 4th International Conference on Development and Learning (ICDL '05)
 - IEEE International Conference on Computer Vision (ICCV '05)
 - IEE International Conference on Visual Information Engineering - VIE 2005 - Convergence in Graphics and Vision (2005)
 - International Conference on Computer Vision Systems - ICVS (2003)
 - European Conference of Artificial Intelligence (2002)
 - Computer Vision and Pattern Recognition Conference (CVPR), Montreal, Canada (2002)
 - Second International Workshop on Computer Vision Systems, Vancouver, Canada (2001)
 - Eighth International Workshop on the Cognitive Science of Natural Language Processing – CSNLP-8 – National University of Ireland, Galway (1999)
 - Irish Machine Vision and Image Processing Conferences (1998-2011)
 - IROS'96: IEEE/RSJ International Conference on Intelligent Robots and Systems, Osaka (1996)
 - European Conference on Computer Vision (1994 -2006)
 - ESPRIT Workshop on "Data Fusion Applications", Brussels, November (1992)
 - ESPRIT Basic Research Action Workshop on "Advanced Matching in Vision and Artificial Intelligence", Technische Universitat Munchen, Germany, (1990).
- Member of the Board of the Irish Pattern Recognition Society (1999 -).

Offices Held

(continued)

- General Chair of the Joint Conference of the Optical Engineering Society of Ireland and the Irish Machine Vision and Image Processing Conference (OESI – IMVIP'98), National University of Ireland, Maynooth (1998).
- Opponent (i.e. External Examiner) at Royal Institute of Technology, Stockholm, Sweden (2011).
- External Examiner of the School of Computer Application, Dublin City University (1997-2001) and the Department of Computer Science and Information Systems, University of Limerick (1997-2000).
- External Ph.D./M.Sc. examiner at University of Dublin, Trinity College (1996, 1997, 1998, 2001); University of Ulster (1998); Dublin City University (1995, 1998, 2000, 2007). University of Limerick (1994), Salford University (1995), Regional Technical College, Cork (1995).
- Member of the Society of Photo-Optical and Instrumentation Engineers (SPIE) Chapter Committee (1996).
- Information Systems Project Officer, Trinity College, Dublin (1993 to 1995)
- Member of the Review Panel of the British Engineering and Physical Sciences Research Council (EPSRC) for Machine Vision Research Grants 1994, 1995, 1996.
- Member of the Joint Steering Committee for Information Services and Information Technology of the Tallaght Regional Hospital (appointed 1994).
- Chair of the Programme Committee of the ESPRIT Workshop on "Multisensor Applications", Brussels, November 1993.
- Chair of the Programme Committee of the ESPRIT Basic Research Action Workshop on "Vision in Context", Killarney, Ireland, September 1991.
- Member of the ESPRIT (European Strategic Programme for Research and Development in Information Technology) Basic Research Action Working Group in Vision; 1989 - 1991.
- Director of the Vision and Sensor Research Unit in the Irish Advanced Manufacturing Technology Programme: 1987 to 1990.

Academic Experience

I began teaching on a part-time basis in 1981 and in October 1983 I was appointed a Lecturer in Computer Science at Trinity College, Dublin. In 1990, I successfully passed the Merit Bar. During the past thirty years, I have been responsible for the development of several new courses and degree programmes at both undergraduate and postgraduate levels. Most of these courses are available online at www.vernon.eu.

- 2006 - 2010 B. Eng. in Computer Engineering: Software Engineering; Algorithms & Data-Structures, Relational Database Systems.
- 2004 - 2006 Cognitive Systems (University of Genoa).
- 2003 - 2005 B. Eng. in Computer Engineering: Computer Interfaces.
- 2000 - 2005 B. Eng. in Computer Engineering: Software Engineering.
- 1999 - 2005 B. Eng. in Computer Engineering: Computer Graphics.
- 1998 - 2001 B. Eng. in Computer Engineering: Algorithms and Data-Structures.
- 1998 - 2001 B. Eng. in Computer Engineering: Computer Technology I & II.
- 1998 B. Eng. in Computer Engineering: Operating Systems.
- 1998 - 2001 B. Eng. in Computer Engineering: Relational Database Systems.

- 1998 Designed a new B.Sc. in Organizational Information Technology Systems, a 4-Year honours degree which was targeted at meeting the needs of business and industry.

- 1997 Designed and implemented a new B.Sc. in Computer Science and Software Engineering, a 4-Year honours degree which complies with the ACM/IEEE Model Curriculum.

- 1996 Designed and implemented a new M.Sc. in Software Engineering, the first of its kind in Ireland.

- 1996 - 1998 M.Sc. in Software Engineering at Maynooth University; M209: Object -Oriented Programming and C++

- 1995 - 1998 B.Sc. at Maynooth University; 1st Year Module CS110: Introduction to Computer Systems

- 1995 - 1998 B.Sc. at Maynooth University; 2nd Year Module CS211: Data Structures II

- 1995 - 1998 B.Sc. at Maynooth University; 4th Year Module CS410: Computer Vision

- 1995 Course Director of a new M.Sc. Degree in Computer Science, Trinity College, Dublin

- 1989 - 1991 B.A.I. in Engineering Science; 2nd. year course on Computer Science.

- 1989 - 1991 M.Sc. in Computer Applications; module on Computer Vision.
The course was run by the Department of Computer Applications, Dublin City University.

- 1989 M.I.E. (Masters of Industrial Engineering); module on Computer Vision. The course was run by the Department of Industrial Engineering, University College Galway.

- 1988 - 1991 B.A. (Mod.) in Computer Engineering; 4th year option on Computer Vision.
- 1994 - 1995

- 1983 - 1988 M.Sc. in Physical Sciences in Medicine; Module on Information Technology.

- 1983 - 1988 B.A.I. in Engineering Science; 4th. year option on Computer-Aided Engineering: Module on Robotics and Robot Vision.

- 1987 B.A. (Mod.) in Computer Engineering; 2nd. year course on Computers and Society.

- 1987 B.A.I. in Engineering Science; 4th. year course on The Engineer and Society.

- 1982 - 1987 B.Sc. in Computer Science; 2nd year course in Structured Programming.

Research Activities

- 2004-2010 **IST Integrated Project 004370: RobotCub: Robotic Open-Architecture Technology for Cognition, Understanding, and Behaviours.**
In collaboration with the University of Genoa.
- 2009-2010 **A Semi-autonomous Mobile Robotic C4ISR System for Urban Search and Rescue.**
UAE ICT Fund.
- 1998-2000 **Measurement and Analysis of 3-D Facial Structure for the Assessment of Reconstructive Surgical Procedures**
Enterprise Ireland Software Programme for Advanced Technology (PAT).
- 1996-1999 **ESPRIT research project 21894 funded by the CEC: Visual Intelligent Recognition for Secure Banking Services (VIRSBS).**
In collaboration with University of Genova, Italy, Ecole Polytechnique Federale de Lausanne, Switzerland, Instituto Superior Tecnico de Lisboa, Portugal, and Logitron s.r.l., Italy.
- 1996-1997 **ESPRIT research project 23009 funded by the CEC: Promotion of OMI by a user support network centre (PROMINENT).**
In collaboration with Institut fur Mikroelektronik- und Mechatronik-Systeme, Germany, Joanneum Research, Austria, SINTEF, Norway, and University of Ulster, UK.
- 1996-1999 **ESPRIT research project 20557 funded by the CEC: High Speed Manipulation by Random Access Vision (RAMAP).**
In collaboration with Siemens, Germany, IMEC, Belgium, and Egemin, Belgium.
- 1995- **Resolving Fourier Components of Spatio-Temporal Image Sequences: A New Theory of Signal Separation, Image Segmentation, and Object Flow & Disparity Estimation.**
Personal research project.
- 1994-1995 **ESPRIT Basic Research Action: HPCNet - Network of Excellence in High Performance Computing**
Founding Member.
- 1990-1993 **ESPRIT research project funded by the CEC: Glove-like Advanced Interface for the Control of Manipulative and Exploratory Procedures in Artificial Realities.**
In collaboration with Aitek Srl, Italy, Scuola Superiore S. Anna, Italy, TAG Ltd., U.K., Eidetics Ltd., Ireland, V.D.S. Spa., Italy.
- 1990-1993 **BRITE/EURAM research project funded by the CEC: Optical In-Process Inspection of Electro-Plated Contact Surfaces.**
In collaboration with Siemens AG, Federal Republic of Germany, and Zenon SA, Greece.
- 1989-1991 **Strategic Research Contract from the Irish Science and Technology Agency: EOLAS.**
The purpose of this research is to develop "Applied Tools for Vision", requiring the design of a sixteen-node MIMD parallel processor (using transputer technology) and the development of an Application Programming Shell.
- 1989 -1991 **Fundamental research in Neural Networks.**
Collaborative research with the Hitachi Dublin Laboratory (HDL) in the O'Reilly Institute for Communication and Technology, Trinity College.

- 1989-1992 **Development of an "eye movement sensor" for a boy suffering from cerebral palsy.**
A miniature vision system which can sense the motion of his eye (and eyelid) and control a speech synthesis system was developed and validated.
- 1987-1989 **NBST (National Board for Science and Technology) Strategic Research Contract.**
Development of a reconfigurable vision processor for industrial machine vision applications using transputer technology.
- 1984-1989 **ESPRIT Project 419 - Image and Movement Understanding.**
Principal investigator. The objective of the project is the automatic understanding of general 3-D scenes using multiple stereoscopic 2-D images. This research was undertaken in collaboration with the University of Genova, the University of Nijmegen, CAPTEC Ltd. in Dublin, and VDS Ltd. in Florence.
- 1982-1985 **Ph.D. Research at Trinity College Dublin.**
Development of a vision system which enables a robot manipulator to grasp a flexible electrical wire from a tray of many such wires and to place it in a crimping press or in a solder bath for tinning.

Supervision of Higher Degrees

Completed Degrees

P. Kenny	M.Sc. 1987	Digital Image Registration Techniques Applied to Radio-Aerosol Imaging in Nuclear Medicine.
K. Dawson	Ph.D. 1991	3-D Computer Vision for Automated Part Manipulation.
Y. Zhao	M.Sc. 1991	An Entropy view of Stereo Fusion.
M. Flanagan	M.Sc. 1992	Perceptual Grouping Processes.
P. O'Neill	M.Sc. 1992	Real-Time Visual Pose Estimation of Human Hands.
M. Jones	M.Sc. 1993	Visual Servo-Control of Robots by Kohonen Nets.
R. Doyle	M.Sc. 1994	Adaptive Servo-Control of a Scara Robot.
R. Waldron	Ph.D. 1995	Language and the Construction of Reality.
T. Lysaght	M. Comp.Sc. 1996	Timbre Morphing
D. Barry	M.Sc. 1998	Active Visual Attention
P. Butler	M.Sc. 1998	3-D surface profiling and analysis of human faces in reconstructive surgery
A. Trenaman	Ph.D. 1999	Evolutionary Computation
P. Thomas	M.Sc. 2002	Automatic Image Registration using Genetic Algorithms
A. Kulaib	M.Sc. 2009	2-D Binaural Sound Localization
E. Basaeed	M.Sc. 2009	Multi-spectral Image Fusion for Victim Detection in Urban Search-And-Rescue Robots
H. AlKaabi	M.Sc. 2009	A Human-Robot Interface for Urban Search-And-Rescue Robots
R. Abdullah	M.Sc. 2009	Selective Visual Attention for Urban Search and Rescue (USAR) Systems

Experience in Strategic Planning

Apart from my general professional responsibilities over the past thirty-two years, I have developed in-depth experience in strategic planning (in both leadership and support roles) as a result of five major endeavours.

The European Systems and Software Initiative

The first of these endeavours arose from my appointment as a Scientific Officer in the Commission of the European Communities (now the European Commission) in 1991. I worked in the Commission for over two years, a period during which I was exposed to many facets of project co-ordination and administration in ESPRIT (European Strategic Programme for Research and Development in Information Technology). However, my most significant contribution to strategic planning was as a member of a small team which developed and launched the pilot phase of the innovative European Systems and Software Initiative (ESSI). The ESSI programme model involved intensive consensus-building in industry and reflected the needs of small and medium-sized companies across Europe. Its innovative character necessitated a wide-spread awareness programme prior to and following the launch of the call for proposals in which I was centrally involved. The success of ESSI resulted in its being adopted as a template for best practice in other Commission programmes.

The Development of a Policy on Information Systems for the University of Dublin

In 1993 I was invited to return to Trinity College as Information Systems Project Officer to co-ordinate the development of a comprehensive policy on information systems. Some 130 people participated in this exercise and approximately 31,000 hours of combined effort were expended over the next two years in bringing it to a successful conclusion.

My activities in this exercise ensured:

- its total commitment to transparency and consensus-building; the vast bulk of the work being concerned with empowering and equipping users to identify their information needs and the subsequent construction of a common vision for information system;
- the clear recognition that information systems are people- and organization-centred and that technology, *per se*, plays only a supporting role;
- the successful preparation of a plan for the re-organization of the University's IT Centre to enable it to provide the service the users had identified;
- the successful preparation of a 5-year IT plan comprising 44 projects for the commissioning of information systems and services.

Head of the Department of Computer Science, National University of Ireland, Maynooth

In 1995 I was appointed to the Chair of Computer Science at Maynooth and the Headship of the Department. At the time, the Department operated a small number of courses at an undergraduate level as part of the general science degree programme. During my tenure in Maynooth, I was responsible for the strategic development of the Department in many key areas such as:

- design and implementation a new B.Sc. in Organizational Information Technology Systems, a 4-Year honours degree which is targetted at meeting the needs of business and industry;
- design and implementation a new B.Sc. in Computer Science and Software Engineering, a 4-Year honours degree which complies with the ACM/IEEE Model Curriculum;
- design and implementation of a new M.Sc. in Software Engineering, the first of its kind in Ireland;
- the launch of a human resources development and training policy;
- the commissioning of a new information systems infrastructure;
- a doubling of academic and support personnel;
- successfully securing funding for a new Computer Science building.

Coordinator of the European Research Network for Cognitive Vision Systems

For the three years from 2002 to 2005 I coordinated *ECVision*, the European Research Network for Cognitive Vision Systems (www.ecvision.org). One of my responsibilities was to lead the development of a research roadmap that will guide the evolution of this embryonic discipline over the next ten years. This was a challenging task because there is significant disagreement in the community as to the extent and focus of the discipline. Nevertheless, the roadmap had to reflect a general consensus and the challenge was to achieve this without disenfranchising anyone. After many meetings, workshops, and bi-lateral communications, we agreed a plan which is the product of over forty researchers, which represents their many different viewpoints in a fair and balanced manner, and which sets out an inclusive and ambitious research agenda.¹

Coordinator of the European Network for the Advancement of Artificial Cognitive Systems

For the three years from 2006 to 2008 I coordinated *euCognition*: the European Network for the Advancement of Artificial Cognitive Systems (www.eucognition.org). This is a highly-interdisciplinary network with members drawn from a great variety of backgrounds, including neuroscience, psychology, artificial life, robotics, and philosophy. My role as coordinator of the network was to engender discussion and debate in the scientific community with a view to focussing research efforts, creating new educational resources, and advancing the cause of this emerging discipline. A key challenge of the network was to foster interaction between all the many different scientific sectors involved in this multi-disciplinary area and to help create truly inter-disciplinary perspectives. By 2008, membership has grown to 370, exceeding the stated target by 300%. The European Commission subsequently funded a follow-on project to continue the network in 2009-2011. There are now more than 700 members.

¹ The ECVision Research Roadmap can be accessed from here: <http://www.ecvision.org>.

Publications (in reverse chronological order)

Most of these publications are available online at www.vernon.eu.

Books

1. Vernon, D., von Hofsten, C., and Fadiga, L. *A Roadmap for Cognitive Development in Humanoid Robots*, Cognitive Systems Monographs (COSMOS), Springer, ISBN 978-3-642-16903-8, 250 pages, 2010.
2. 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.
3. Vernon, D. (Ed.). *Proceedings of the Sixth European Conference on Computer Vision*, LNCS Vols. 1842 & 1843, Springer-Verlag, Heidelberg, 953 & 881 pages, respectively, ISBN 3-540-67685-6 & 3-540-67686-4, 2000.
4. Vernon, D. (Ed.). *Proceedings of the Optical Engineering Society of Ireland & Irish Machine Vision and Image Processing Joint Conference, National University of Ireland, Maynooth*, 316 pages, 1998.
5. Vernon, D. (Ed.). *Computer Vision: Craft, Engineering, and Science*, Springer-Verlag, Heidelberg, 96 pages, ISBN 3-540-57211-2, 1994
6. Pfleger, S., Goncalves, J., and Vernon, D. (Eds.) *Data Fusion Applications*, Springer-Verlag, Heidelberg, 265 pages, ISBN 3-540-56973-1, 1993.
7. Vernon, D. and Sandini, G. (Eds.) *Parallel Computer Vision: The VIS à VIS System*, Ellis-Horwood, UK, 276 pages, ISBN 0-13-932716-9, 1992.
8. Vernon, D. *Machine Vision: Automated Visual Inspection and Robot Vision*, Prentice-Hall International (UK) Ltd., 260 pages, ISBN 0-13-543398-3, 1991.

Book Reviews

9. *Vision: Variations on Some Berkeleian Themes*, Robert Schwartz, Oxford, Basil Blackwell, in *Berkeley Newsletter*, No. 13, pp. 13-14., 1994.

Journal Publications

10. Vernon, D. "Enaction as a Conceptual Framework for Developmental Cognitive Robotics", *Paladyn. Journal of Behavioral Robotics*, Vol. 1, No. 2, pp. 89-98, 2010.
11. 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*, Special issue on Social Cognition: From Babies to Robots, Vol. 23, pp. 1125-1134, 2010.
12. 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.
13. Vernon, D. "Guest Editor Introduction", *Image and Vision Computing*, Special Issue on Cognitive Vision, Vol. 26, No. 1, pp. 1-4, 2008.
14. 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*, special issue on Autonomous Mental Development, Vol. 11, No. 2, pp. 151-180, 2007.

15. Tsagarakis, N.G., Metta, G., Sandini, G., Vernon, D., Beira, R., Santos-Victor, J., Carrazzo, M.C., Becchi, F. and Caldwell, D.G., "iCub - The Design and Realisation of an Open Humanoid Platform for Cognitive and Neuroscience Research", *International Journal of Advanced Robotics*, Vol. 21 No. 10, pp. 1151-75, 2007.
16. Ghita, O. Whelan, P, Vernon, D. and Mallon, J. 2007 "Pose estimation for objects with planar surfaces using eigenimage and range data", *Machine Vision and Applications*, Springer Berlin / Heidelberg, Volume 18, Number 6 / December, pp. 355-365, 2007.
17. Vernon, D., Metta, G., and Sandini, G. "Una panoramica sui sistemi cognitivi artificiali", *Sistemi Intelligenti*, 2007.
18. Vernon, D. "Cognitive Vision: The Development of a Discipline", *KI-Zeitschrift Künstliche Intelligenz*, German Society for Informatics, April, Special Issue on Cognitive Computer Vision, pp 38-41, 2005.
19. Vernon, D. "A Binocular Model for Figure-Ground Segmentation in Translucent and Occluding Images", *Optical Engineering*, Vol. 41, No. 10, pp. 2525-2531, 2002.
20. 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.
21. Vernon, D. "The Dilemma of Emancipation in the Information Society", *Studies in Education*, Vol XIII, No. 1, pp. 26-33, 1997.
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