
CURRICULUM VITAE: Mandyam Veerambudi Srinivasan

Qualifications

- 1994: D.Sc. in Neuroethology, Australian National University.
- 1977: Ph.D. in Engineering and Applied Science, Yale University, New Haven, Connecticut, U.S.A.
- 1973: M.Phil. in Engineering and Applied Science, Yale University, New Haven Connecticut, U.S.A.
- 1970: Masters' degree in Applied Electronics & Servomechanisms (High Distinction),
Indian Institute of Science, Bangalore, India
- 1968: Bachelors' degree in Electrical Engineering (First Class), Bangalore University, India
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Awards and Distinctions

- 2008: Rank Prize in Optoelectronics (U.K)
- 2007: Queensland Premier's Fellowship
- 2006: Prime Minister's Science Prize (Australia)
- 2006: Royal Society of New Zealand Distinguished Visitor
- 2006: Election to the Academy of Sciences of the Developing World
- 2003: Australian Centenary Medal
- 2002: Doctor honoris causa (Dr. h.c.), University of Zuerich
- 2001: Election to the Fellowship of the Royal Society of London (FRS)
- 2001: Inaugural Australian Federation Fellowship award
- 2001: Australasian Science Prize
- 1996-97: Daimler-Benz Fellow (Wissenschaftskolleg), Institute of Advanced Studies, Berlin.
- 1995: Election to the Fellowship of the Australian Academy of Science (FAA).
- 1973: Marshall, M.Phil. Degree Ceremony, Yale University.
- 1970: Khambatti Memorial Award for top graduate student in Electrical Engineering,
Indian Institute of Science, Bangalore.
- 1967: First rank (out of ca. 500 students), Fourth Year Electrical Engineering, Bangalore University
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Current positions

- a) Professor of Visual Neuroscience, Queensland Brain Institute,
and Professor of Electrical Engineering, School of Information Technology and Electrical Engineering,
University of Queensland
 - b) Queensland Smart State Premier's Fellow
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Research interests

Principles of visual processing in simple natural systems, and application of these principles to machine vision and robotics.

Previous Appointments

- 2002-2006: Inaugural Federation Fellow, Australian Research Council
2002-2006: Distinguished Professor of Visual Science, Research School of Biological Sciences, Australian National University
1994 - 2002: Professor of Visual Science, Research School of Biological Sciences, Australian National University
1994-96,
2000-2006: Director, Centre for Visual Science, Australian National University

1992-93: Senior Fellow, Visual Sciences, Research School of Biological Sciences, Australian National University, Canberra, Australia
1985-91: Fellow, Visual Sciences, Research School of Biological Sciences, Australian National University, Canberra, Australia
1982-85: Assistant Professor of Biophysics, Department of Neurobiology, University of Zurich, Switzerland.
1978-82: Research Fellow, Departments of Neurobiology and Applied Mathematics, Australian National University, Canberra, Australia
1977-78: Research Scientist, Department of Ophthalmology and Visual Science, Yale University School of Medicine, New Haven, Connecticut, U.S.A.
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Representative publications

- Srinivasan M.V., Laughlin S.B. and Dubs A. (1982) Predictive coding: a fresh view of inhibition in the retina. *Proc. R. Soc. Lond. B* 216, 427-459
Lehrer M., Srinivasan M.V., Zhang S.W. and Horridge G.A. (1988) Motion cues provide the bee's visual world with a third dimension. *Nature. (Lond.)* 332, 356-357.
Srinivasan M.V., Lehrer M., Kirchner W.H. and Zhang S.W. (1991) Range perception through apparent image speed in freely-flying honeybees. *Visual Neuroscience* 6, 519-535.
Srinivasan M.V., Zhang S.W. and Rolfe B. (1993) Pattern vision in insects: "cortical" processing? *Nature (Lond.)* 362, 539-540. (This paper was accompanied by a *News and Views* article)
Zhang S.W. and Srinivasan M.V. (1994) Prior experience enhances pattern discrimination in insect vision. *Nature (Lond.)* 368, 330-332. (This paper attracted a short article in *New Scientist*)
M.V. Srinivasan (1994): An image-interpolation technique for the computation of optic flow and egomotion. *Biol. Cybernetics* 71, 401-416.
Zhang S.W., Srinivasan M.V. and Collett T.S. (1995) Convergent processing in honeybee vision: Multiple channels for the recognition of shape. *Proc. Nat. Acad. Sci. U.S.A.* 92, 3029-3031.
Srinivasan, M.V., Zhang, S.W., Lehrer, M. and Collett, T.S. (1996) Honeybee navigation en route to the goal: visual flight control and odometry. *J. Exp. Biol.* 199, 237-244
Srinivasan M.V., Zhang S.W. and Bidwell N. (1997) Visually mediated odometry in honeybees. *J. Exp. Biol* 200, 2513-2522. (This paper attracted an article in *New Scientist*)
J.S. Chahl and M.V. Srinivasan (1997): Reflective surfaces for panoramic imaging. *Applied Optics* 36, 8275-8285.
Srinivasan M.V., Zhang S.W. and Zhu H. (1998) Honeybees link sights to smells. *Nature (Lond.)* 396, 637-638. (This paper attracted an article in *New Scientist*)
Srinivasan M.V., Chahl J.S., Weber K.S., Venkatesh S., Nagle M.G. and Zhang S.W. (1999): Robot navigation inspired by principles of insect vision. *Robotics and Autonomous Systems* 26, 203-216.
Srinivasan M.V., Zhang S.W., Altwein M. and Tautz J. (2000) Honeybee navigation: nature and calibration of the 'odometer'. *Science* 287, 851 – 853. (With cover illustration and accompanying *Perspectives* article)

Srinivasan M.V., Zhang S.W., Chahl J.S., Barth E., and Venkatesh S. (2000) How honeybees make grazing landings on flat surfaces. *Biological Cybernetics* 83, 171-183. (This paper attracted an article in *New Scientist*)

Barrows G.L., Chahl J.S. and Srinivasan M.V. (2003) Biomimetic visual sensing and flight control. *The Aeronautical Journal*, London : The Royal Aeronautical Society, vol, 107, No. 1069, pp. 159-168. (This paper was awarded the Royal Aeronautical Society's Simms Prize for the best paper of the year).

Srinivasan M.V. (2002) Visual Flight Control and Navigation in Honeybees, and Applications to Robotics. In: *Neurotechnology for Biomimetic Robots*, J. Ayers, J.L. Davis and A. Rudolph (eds.), MIT Press, pp 593 – 610.

Reinhard, J., Srinivasan, M.V. and Zhang, S.W. (2004) Scent-triggered navigation in honeybees. *Nature (Lond.)* 427, 411.

M.V. Srinivasan., S.W. Zhang, J S Chahl, G Stange and M Garratt (2004) An overview of insect inspired guidance for application in ground and airborne platforms. *Proc Inst Mech Engnrs Part G: J Aerospace Engineering* 218, 375-388.

From Living Eyes to Seeing Machines, M.V. Srinivasan and S. Venkatesh (eds), Oxford University Press, U.K. (1997).

Publications: ca. 180 full-length research publications, 40 review chapters, 2 edited books, 2 international patents.

Grants, 2003-2008: Ca. \$ 5 M from the ARC, Australian and overseas Defence Research Organisations, and International research funding bodies such as the Human Frontiers Science Program
