

PAVAN RAMKUMAR

DATE OF BIRTH 07/07/1985
NATIONALITY Indian
LANGUAGES English, Tamil, Hindi
AFFILIATION Brain Research Unit, Low Temperature Laboratory, Aalto University, Finland
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EDUCATION **AALTO UNIVERSITY SCHOOL OF SCIENCE, FINLAND** (2009–2012)
Dr. Tech. Information and Computer Science
Thesis: Advances in modeling and characterization of human neuromagnetic oscillations.

HELSINKI UNIVERSITY OF TECHNOLOGY, FINLAND (2007– 2009)
M.Sc. Tech. in Bioinformatics
Thesis: Modeling the dynamics of human neuromagnetic brain rhythms
Grade: 5/5

INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI, INDIA (2002– 2006)
B. Tech. Electronics and Communication Engineering
Thesis: EEG Signal Acquisition, De-Noising and Classification for Biometric Applications
Grade: 10/10

RESEARCH

EXPERIENCE

BRAIN RESEARCH UNIT, LOW TEMPERATURE LABORATORY (2006 – present)

HELSINKI UNIVERSITY OF TECHNOLOGY, FINLAND

Modeling of MEG rhythms

Analysis of MEG rhythms during resting state

Investigations in low-level vision and scene perception

INSTITUTE OF COMPUTER GRAPHICS AND VISION (May – July 2005)

TECHNISCHE UNIVERSITÄT, GRAZ, AUSTRIA

Dynamic Stereo-Visual Servoing of a MITSUBISHI 6-DOF Robot

COMPUTER VISION AND IMAGE PROCESSING LAB (May – July 2004)

INDIAN INSTITUTE OF SCIENCE, BANGALORE, INDIA

Stereo Camera Calibration and Hand Eye Co-ordination of a RHINO XR-3 Robot

REFEREED

PUBLICATIONS

Ramkumar P, Jas M, Pannasch S, Parkkonen L, Hari R. 2012. Uncovering the dynamics of low-level visual feature processing using time-resolved decoding of single-trial MEG responses. 2012. In Preparation.

Ramkumar P, Parkkonen L, Hyvärinen A. Group-level spatial independent component analysis of Fourier-envelopes of resting-state MEG data. 2012. Under Revision.

Ramkumar P, Pannasch S, Hansen BC, Larson AM, Loschky LC. 2011. How does the brain represent visual scenes? A neuromagnetic scene categorization study.

To appear in proceedings of the Neural Information Processing Systems (NIPS) Workshop on Machine Learning in Neuroimaging.

Ramkumar P, Parkkonen L, Hari R, Hyvärinen A. 2012. Characterization of neuromagnetic brain rhythms over time scales of minutes using spatial independent component analysis. Human Brain Mapping, In Press.

Ramkumar P, Parkkonen L, Hari R. 2010. Oscillatory response function: Towards a parametric model of rhythmic brain activity. Human Brain Mapping, 31, 820–834.

Hyvärinen A, **Ramkumar P**, Parkkonen L, Hari R. 2010. Independent component analysis of short-time Fourier transforms for spontaneous EEG/MEG analysis. Neuroimage, 49, 257–271.

Ramkumar P, Hyvärinen A, Parkkonen L, Hari R. Characterization of spontaneous neuromagnetic brain rhythms using independent component analysis of short-time Fourier transforms. Proceedings of the 17th International Conference on Biomagnetism, April 2010, Dubrovnik.

Malinen S, Vartiainen N, Hlushchuk Y, Koskinen M, **Ramkumar P**, Forss N, Kalso E, Hari R. 2010. Aberrant temporal and spatial brain activation during rest in patients with chronic pain. Proceedings of the National Academy of Sciences USA, 107: 6493-6497.

Singhal GK*, **Ramkumar P***. Person identification using evoked potentials and peak matching. IEEE Biometrics Symposium, 2007, Baltimore.

CONFERENCES

Over 15 abstracts and one talk presented at conferences such as

Neural Information Processing Systems (**NIPS 2011**)
Society for Neuroscience Annual Meeting (**SfN 2007 and 2011**),
Organization of Human Brain Mapping Annual Meeting (**OHBM 2010**),
International Neuroinformatics Co-ordination Facility (**INCF 2008 and 2009**)
International Conference on Biomagnetism (**BIOMAG 2010**)

BOOK CHAPTERS

"Creating a Flourishing Innovation Climate" in Bitbang: Energising Innovation, Innovating Energy. 2011. Eds. Yrjö Neuvo and Sami Ylonen.

"Smart Grids: Power to the people, power from the people" in Bitbang: Energising Innovation, Innovating Energy. 2011. Eds. Yrjö Neuvo and Sami Ylonen.

AWARDS

Represented Finland at the annual Lindau Meeting of Nobel Laureates in Physiology and Medicine 2011, held in Lindau, Germany. www.lindau-nobel.org

Aalto University **Doctoral Scholarship** 2011 (awarded to graduate students who have completed their coursework in less than two years after earning the masters degree).

1000 EUR

Organization of Human Brain Mapping Annual Meeting **Abstract Award**, 2010
600 USD

International Conference on Biomagnetism **Fellowship Award**, 2010 (for top 6 proceedings papers from graduate students)
400 EUR

Finnish Graduate School of Neuroscience **Academic Fellowship**, 2010-2011.
55000 EUR

International Neuroinformatics Co-ordination Facility (INCF) **Travel Award**, 2009
400 EUR

Visiting Research Fellowship 2006, Centre of International Mobility, Finland
13000 EUR

Indian Academy of Sciences (IAS) Student Summer Fellowship Programme
2004

Institute Merit Scholarship (awarded for securing highest departmental grade point average in the academic year 2002-2003), IIT Guwahati
60000 INR

Gold Medalist in the **Indian National Chemistry Olympiad**, 2002
(among 28 in India after 4 stages of rigorous theoretical and practical examinations)

Participant in the **International Chemistry Olympiad Training Camp**, 2002, held at Tata Institute of Fundamental Research, Mumbai, INDIA

REFEREE

EXPERIENCE

Reviewer of abstracts for the Organization of Human Brain Mapping Annual Meeting 2010.

Reviewer of contest submissions for an **MEG data analysis contest**:
<http://www.cis.hut.fi/icann11/mindreading.php>

MENTORSHIP

EXPERIENCE

2010–2012. Serve as an instructor for a machine-learning and data mining masters thesis on eye-gaze-based classification of visual stimuli.

2011. Served as a mentor and instructor to an international summer student. I proposed the summer project and was responsible for hiring and supervising his work.

Mentoring and editing an interdisciplinary team of PhD students working on two book chapters related to entrepreneurship and services:
<http://mide.aalto.fi/en/BitBang10-11>

ADMINISTRATIVE

EXPERIENCE

2011. Co-organized an industrial visit **from Helsinki to Bangalore** for the 2011 edition of a graduate level multidisciplinary course:
<http://mide.aalto.fi/en/BitBang10-11>

2010-2011. Co-organized an **MEG data analysis contest** for the international conference on artificial neural networks (ICANN2011):
<http://www.cis.hut.fi/icann11/mindreading.php>

ACTIVITIES

2010. Founded and ran a monthly event series where I screened talks from leading multidisciplinary conferences such as **TED** and moderated free discussion to a public audience with the intention of increasing curiosity towards great ideas.

2010. Served as vice-president of the founding board of a university-wide organization called **Aalto Social Impact** which strives to support social entrepreneurship and promote social consciousness. I participated in building the vision, setting strategic directions, putting together a team of international board members, as well as organizing various events: <http://www.aaltosi.org>

2010. Participated in an industrial visit to **Shanghai** as part of a multidisciplinary course for graduate students from various disciplines tasked with writing two book chapters on upcoming trends in innovation and energy for a general audience: <http://mide.aalto.fi/en/BitBang10-11>.

REFERENCES

Prof. Riitta Hari hari@neuro.hut.fi

Prof. Aapo Hyvärinen aapo.hyvarinen@helsinki.fi

Dr. Lauri Parkkonen lauri@neuro.hut.fi

Dr. Lester Loschky loschky@ksu.edu

Dr. Bruce Hansen bchansen@colgate.edu