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University of Wales, Newport,
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Md Omar Faruque Sarker

EDUCATION

Ph.D. Technology (Robotics), University of Wales, Newport, UK, 2010
Thesis: *Self-regulated Multi-robot Task Allocation*

M.Eng. HCI & Robotics, Korea Institute of Science & Technology,
University of Science & Technology, South Korea, 2007
Thesis: *A Knowledge-Based Service Approach for Human-Centered Robots*
Graduate courses: *Human Machine Interaction, Intelligent Control, Mobile Robotics, Computer Vision, Advanced Symbolic AI Techniques* and *Information Security*. CGPA: 4.18/4.5.

B.Sc. Mechanical Engineering, Bangladesh University of Engineering and Technology, 2005
Final-year elective courses: *Mechatronics* and *Bio-Engineering*

EMPLOYMENT

10/2007 - present PhD Student/ Research Assistant
Cognitive Robotics Research Centre, University of Wales, Newport, UK.

08/2005 - 07/2007 Postgraduate Research Assistant
Center for Cognitive Robotics, Korea Institute of Science & Technology, S. Korea

03/2005 - 07/2005 Lecturer and Coordinator (Industrial Training Program)
Dept. of CSE, International Islamic University of Chittagong, Dhaka campus, Bangladesh

10/2004 - 05/2005 Network Engineer
Institute of Info & Communication Tech., Bangladesh University of Engineering & Technology

05/2004 - 09/2004 Systems Engineer (Part-Time)
Ektoo Limited, Dhaka, Bangladesh.

11/2002 - 04/2004 Associate Editor (Part-Time)
Technology Today Ltd., Dhaka, Bangladesh.

04/2002–06/2004 Tutor (Part-time)
Institute of Info & Communication Tech., Bangladesh University of Engineering & Technology

AWARDS

10/2010 - Present University of Wales, Newport, UK Research Support Grant

10/2007 - 09/2010 EPSRC, UK PhD Studentship (Grant ref. EP/E061982/1)

05/2010 - 08/2010 Google Summer of Code Open-source Software Development Sponsorship for Tahoe-LAFS

05/2009 - 08/2009 Google Summer of Code Open-source Software Development Sponsorship for Bluez

09/2005 - 08/207 Korea Institute of Science & Technology - Int'l R & D Academy Postgraduate Scholarship

07/2000 - 06/2004 Bangladesh University of Engineering & Technology Technical Scholarship

1997 District Commissioner's Gold Medal Honour for the Best Student of the Year

1996 Prime Minister's Award for Merit List Position in SSC Examination

1995 International Friendship Award, Scouts Invitation Program, Boy Scouts of Nippon, Japan

RESEARCH INTERESTS

Networking & communication systems: *Scalable distributed processing for complex networks and clouds.*
AI and Robotics: *Bio-inspired decentralized control of multi-robot systems and application in search and rescue.*
Computer vision and image processing: *Multi-agent tracking and real-time image processing.*

TEACHING INTERESTS

Computer Networks, Information Security, Network Programming, Artificial Intelligence, Mobile Robotics, Intelligent Control, Applied Computer Vision and Multi-agent Systems.

TECHNICAL SKILLS/TOOLS

Proficient Programming Languages: *C/C++, Python, Unix shell scripts, Prolog, LaTeX.*
Tools: *Git and Darcs revision control system, OpenCV computer vision library, SwisTrack multi-robot tracker, Epuck, Myro and Player/Stage robot control frameworks, NetLogo multi-agent simulator, Xenomai Linux based real-time OS, popular Unix/Linux network servers (e.g. Apache, MySQL), Linux Netfilter IPTables security package, CORAL, XSB , FuzzyCLIPS deductive databases and logic programming knowledge-based systems.*

Familiar: *MATLAB, Tcl/Tk, HTML/XML, Java, PHP, Bluez Bluetooth stack, Tahoe-LAFS distributed P2P file system.*

PUBLICATIONS

Book Chapter and Journal Paper

[1] Sarker M. O. F. and Dahl T. S. A Robotic Validation of the Attractive Field Model: An Inter-disciplinary Model of Self-regulatory Social Systems. *Swarm Intelligence, Lecture Notes in Computer Science* , 6234:24–35, 2010.

[2] Sarker M. O. F. Kim C. Sadi M. G. and You. B-J. Developing Knowledge-Based Security-Sense of Networked Intelligent Robots. *Lecture Notes in Computer Science*, 4251:874–881, 2006.

Conference Papers

[3] Sarker, M. O. F. and Dahl, T. S. Flexible Communication in Multi-robotic Control System Using HEAD: Hybrid Event-driven Architecture on D-Bus. In *Proc. of the UKACC International Conference on Control, CONTROL 2010, Coventry, UK*, pages 926–931, September 7-10, 2010.

[4] Sarker M. O. F. and Dahl T. S. Communication strategies for self-regulated division of labour in robot society. In *Proceedings of the 2009 European Conference on Complex Systems (ECCS'09), Warwick, UK*, pages 157–158, September 21-25, 2009.

[5] Sarker M. O. F. Park, J-M. Kim C. and You. B-J. A Knowledge-Based Service Approach for Human-Centered Robots. In *In Proc of the 16th IEEE International Symposium on Robot and Human interactive Communication, 2007. RO-MAN 2007*, pages 582–587, 2007.

[6] Sarker M. O. F. Kim C. Baek S. and You. B-J. An IEEE-1394 Based Real-time Robot Control System for Efficient Controlling of Humanoids. In *In Proc of the 2006 IEEE/RSJ International Conference on Intelligent Robots and Systems IROS 2006*, pages 1416–1421, 2006.

[7] Sarker M. O. F. Kim C. Cho J-S. and You. B-J. Development of a Network-based Real-Time Robot Control System over IEEE 1394: Using Open Source Software Platform. In *In Proc of the IEEE International Conference on Mechatronics, ICM 2006*, pages 563–568, 2006.

Technical Report and Thesis

[8] Sarker, Md Omar Faruque. Emergent Self-regulation in Social Robotic Systems. Technical report, University of Wales, Newport, UK, November 2008. *Submitted as PhD Transfer Report*.

[9] Sarker, Md Omar Faruque. A Knowledge-Based Service Approach for Human-Centered Robots. Technical report, University of Science and Technology, South Korea, August 2007.

Submitted/Accepted for Publication

[10] Sarker M. O. F. and Dahl T. S. Bio-inspired Communication for Self-regulated Multi-robot Sytems. Accepted for publication in Multi-Robot Systems, Trends and Development, ISBN 978-953-7619-X-X, 2010.

[11] Sarker M. O. F. and Dahl T. S. Self-regulated Multi-robot Task Allocation: A Taxonomy and Comparison of Centralized and Local Communication Strategies. In submission to *Elsevier Robotics and Autonomous System*, 2010.