

Prof. Swapan Bhattacharya



Pointers for communication:

Address:

Director
National Institute of Technology Durgapur
M.G. Avenue, Durgapur – 713 209, INDIA
&
Professor (on-lien)
Department of Computer Science & Engineering
Jadavpur University, Kolkata – 700 032, INDIA

E-mail: swapan.bhattacharya@cse.nitdgp.ac.in

bswapan2000@yahoo.co.in

director@admin.nitdgp.ac.in

Tel: +91-343-2546397

FAX: +91-343-2547375

Academic Background :

Rank 3rd in H.S. Exam, 1973 of West Bengal. Board from Hindu School, Kolkata

Rank 1st in B.Sc. Exam, 1976 of Univ of Calcutta from
Presidency College, Kolkata in Physics Honours

Rank 2nd in B.Tech, 1979 from Institute of Radio Physics & Electronics of Univ of Calcutta, India

Rank 2nd in M.Tech 1981 from Dept of Computer Science & Engineering of Univ of Calcutta, India

Rank 2nd (in Operations Research Group) in M.B.A, 1987 from Jadavpur University, Calcutta, India

PhD in Computer Science & Engineering in 1991 from Univ of Calcutta

Special achievements (selected list):

Award of Sr. Research Associateship (1999-2001) from National Research Council, USA

Young Scientist Award from UNESCO in 1989

Gold Medal from Univ of Calcutta, India in 1976

Areas of research interest:

Requirements Engineering, Functional Specifications, Software Testing,
Distributed Computing, Interconnection Systems, Systems Modelling

Length of professional experience: 25 years

Professional experience – international assignments (selected list):

Collaborative research works on Requirements Engineering & Functional Specs
with the School of Computing, Univ of New Castle, UK during 2004-05

Co-ordinator of PhD program in Software Engineering at Naval Postgraduate
School, Monterey, CA during 1999-2001

Founder Head, Dept of Computer Sc & Engg of Atilim Univ at
Ankara, Turkey during 1997-98

Collaborative research works on design of semi-structured large information
Systems in the Dept of Computer Sc of Michigan State University, USA in 19997.

Visiting faculty member (subject : Software Engg) at Asian Institute of Technology, Bangkok in 1994

Professional experience – national assignments (selected list):

Associate Professor in the Operations Management Group of Indian Institute of Management, Joka, Kolkata in 1997.
Professor & Head, Dept of Computer Sc & Engg of National Inst of Technical Teachers Training & Research, Kolkata during 1992-97.
Head of the Dept. of Computer Sc & Engg of Univ of Calcutta in 1992.
Software Engineer (Asstt Professor) in Indian Institute of Technology, Powai, Mumbai, during 1986-87.
Systems Analyst in Computer Assisted Management (CAM) Centre of Indian Inst of Management, Joka, Kolkata during 1985-86.
Systems Analyst in M.N. Dastur & Co (P) Ltd during 1982-84.

Broad domains of supervised PhD work during last 4 years (selected list):

1. Modelling of Constraints in Distributed Object Oriented Environment.
2. Conceptual Level Design of Distributed Information Systems based on Functional Abstraction.
3. Analysis and Testing of Object-Oriented Systems.
4. Functional Specifications of Object Oriented Systems: A Model Driven Approach.
5. Service-oriented Architectures for Banking Systems.
6. Aspect oriented design of large and complex information systems.
7. Design and analysis on optimal placement of sensors in generalized environment.

List of Publications during last 4 years (selected list):

Books/Book Chapters

1. Ananya Kanjilal, Sabnam Sengupta, Swapan Bhattacharya, “Graph Based Analysis of Object-Oriented Systems”, - Chapter in the Book entitled “Object-Oriented Analysis and Design”, NOVA Science Publishers (In Press).
2. Swapan Bhattacharya, Ananya Kanjilal and Sabnam Sengupta, “Tools and Techniques for Model Based Testing”, Chapter –XVI in “Handbook of Research on Software Engineering and Productivity Technologies: Implications of Globalisation”, Information Science Reference (Imprint of IGI Global), August 2009.

Journal

1. Anirban Sarkar, Sankhayan Choudhury, Nabendu Chaki, Swapan Bhattacharya, “*Quality Evaluation of Conceptual Level Object Oriented Multidimensional Data Model*”, Accepted in International Journal of Computers and Applications (ISSN: 1206-212X), ActaPress, On July 31, 2009.
2. Anirban Sarkar, Sankhayan Choudhury, Nabendu Chaki, Swapan Bhattacharya, “*Conceptual Level Design of Object Oriented Data Warehouse: Graph Semantic Based Model*”, Accepted in INFOCOMP Journal of Computer Science ((ISSN 1807-4545), On September 23, 2009.
3. Abhik Sengupta; Sabnam Sengupta; Swapan Bhattacharya; “A Framework for Component Design using MVC Design Pattern”: INFOCOMP Journal of Computer Science ; Page 60-69, Vol.7 No.4 December 2008
4. Ananya Kanjilal, Goutam Kanjilal and Swapan Bhattacharya, “Metrics based analysis of requirements for object-oriented systems: An empirical approach”, INFOCOMP Journal of Computer Science, Vol 7, No. 2, pp 26-36, June 2008.
5. Sabnam Sengupta, Swapan Bhattacharya, “Formalization of Functional Requirements of Software Development Process”, In the Journal of Foundations of Computing and Decision Sciences (FCDS), Institute of Computing Science, Poznan University of Technology, Poland, Vol 33, Issue 1, pp 83-115, 2008.
6. Nabendu Chaki, Swapan Bhattacharya “Performance Analysis of Multistage Interconnection Networks with A New High-level Net Model”, Journal of Systems Architecture (JSA), Elsevier Press, Vol. 52, No. 1, pp.56-70, 2006.
7. Sankhayan Choudhuri, Nabendu Chaki, Swapan Bhattacharya, “GDM : A New Graph based Data Model using Functional Abstraction”, Journal of Computer Science & Technology (JCST), Chinese Academy of Sciences & Springer, Vol. 21, No. 3, pp. 430-438, May, 2006.
8. Swapan Bhattacharya and Ananya Kanjilal “Code Based Analysis of Object Oriented Systems”, Journal of Computer Science & Technology JCST, Vol 21, No. 6, pp 965-972, November 2006.

Conference Proceedings

1. Dipankar Majumdar, Swapan Bhattacharya, "A Vector Analysis Model for Identifying Aspectual Requirements", to be published in the Proc. Of ACM 3rd India Software Engineering Conference, Mysore, Feb 25-27, 2010
2. Sabnam Sengupta, Ananya Kanjilal, Swapan Bhattacharya, "Analysis of Object-Oriented Design: A Metrics Based approach", in the proceedings of IEEE Tencon, 2009, Singapore, November 23-26, 2009
3. Jayeeta Chanda, Ananya Kanjilal, Sabnam Sengupta, Swapan Bhattacharya, "Traceability of Requirements and Consistency Verification of UML Usecase, Activity and Class Diagram: A Formal Approach", to be published in the proceedings of International Conference on Methods and Models in Computer Science (IEEE ICM2CS), New Delhi, Dec 14-15, 2009.
4. Dipankar Majumdar, Swapan Bhattacharya, "A Design Model based Execution Environment for Aspect Oriented Systems", to be published in the proceedings of International Conference on Methods and Models in Computer Science (IEEE ICM2CS), New Delhi, Dec 14-15, 2009.
5. Dipankar Majumdar, Swapan Bhattacharya, "A Layered Architecture for Aspect Oriented Runtime Environment", Proc. Of IEEE Tencon 2009, Singapore, Nov 2-4, 2009
6. Dipankar Majumdar, "Migration from Procedural Programming to Aspect Oriented Paradigm", Proc. Of Doctoral Symposium of the 24th IEEE/ACM International Conference on Automated Software Engineering (ASE 2009), Auckland, New Zealand, pp 708-711, Nov 16-20, 2009
7. Dipankar Majumdar, Swapan Bhattacharya, "Traceability of Software Specifications: A Relational Schema" Proc. Of 13th IASTED International Conference of Software Engineering and Applications (SEA 2009), Cambridge, Massachusetts, USA, pp 16-23, Nov 2-4, 2009.
8. Anirban Sarkar, Sankhayan Choudhury, Nabendu Chaki, Swapan Bhattacharya, "*Object Specification for Graph Based Conceptual Level Multidimensional Data Model*", 21st International Conference on Software Engineering and Knowledge Engineering (SEKE 2009), Boston, USA, PP 694-697, July 1-3, 2009. [ISBN: 1-891706-24-1]
9. Dipankar Majumdar, Swapan Bhattacharya, "Separating the Scattered Concerns – A Graph based Model", in the proceedings of International Conference on Software Engineering and Knowledge Engineering, (SEKE-2009) Boston, USA
10. Dipankar Majumdar, Swapan Bhattacharya, "Aspect Filter: A Metric Based Approach for Aspect Mining", to be published in the proceedings of International Conference on Software Engineering Research Practices, (SERP-2009) Las Vegas, USA
11. Ananya Kanjilal, Sabnam Sengupta and Swapan Bhattacharya, "Analysis of Complexity of Requirements: A Metrics based Approach", to be published in Proceedings of ACM Sigsoft 2nd Indian Software Engineering Conference (ISEC 2009), Pune, India, February 17-19, 2009.
12. Anirban Sarkar, Sankhayan Choudhury, Nabendu Chaki, Swapan Bhattacharya, "*Measuring Quality Metrics for Object Oriented Multidimensional Conceptual Data Model*", 9th IASTED International Conference on Software Engineering and Applications, Florida, USA, pp 94 – 99, Nov 16 – 18, 2008.
13. Ananya Kanjilal, Sabnam Sengupta and Swapan Bhattacharya, "CAG: A Component Architecture Graph", to be published in Proceedings of IEEE TENCON, Hyderabad, India, Nov 19-21, 2008.
14. Ananya Kanjilal, Goutam Kanjilal, Swapan Bhattacharya, "Integration of Design in Distributed Development using D-Scenario Graph", Third International Conference on Global Software Engineering (ICGSE'08), Bangalore, India, August 17-20, 2008.
15. Sabnam Sengupta, Ananya Kanjilal, Swapan Bhattacharya, "Traceability of Requirements in Software Development Process: An empirical approach", Proceedings of 19th IEEE/IFIP International Symposium on Rapid System Prototyping (RSP '08), pp 105-111, Monterey, CA, USA, June 2-5, 2008.
16. Anirban Sarkar, Narayan C Debnath, Swapan Bhattacharya, "*Towards Quality Metrics for Conceptual Level Object Oriented Multidimensional Data Model*", 2nd International Conference on Information System, Technology and Management, ICISTM-08, Dubai, UAE, March 6 – 8, 2008.
17. Sabnam Sengupta, Abhik Sengupta, Swapan Bhattacharya "Requirements to Components: A Model-View-Controller architecture", Proceedings of 14th Monterey Workshop, pp 167-184, Monterey, CA, USA, September 10-13, 2007.
18. Sabnam Sengupta, Swapan Bhattacharya, "Functional Specification of Object Oriented Systems: A Model Driven Framework", Proceedings of the Doctoral Symposium of the 31st Annual IEEE International Computer Software and Applications Conference (COMPSAC'07), pp 667-672, Beijing, China, July 22-27, 2007.
19. Anirban Sarkar, Swapan Bhattacharya, "*The Graph Object Oriented Multidimensional Data Model: A Conceptual Perspective*", 16th International Conference on Software Engineering and Data Engineering, SEDE 2007, Las Vegas, USA, pp 165 – 170, July 2007.

20. Sabnam Sengupta, Swapan Bhattacharya, "Formalization of Functional Requirements and Their Traceability in UML Diagrams- A Z Notation Based Approach", Proceedings of the 11th Systems Engineering Test & Evaluation Conference (SETE'06), Melbourne, Australia, September 25-27, 2006.
21. Sabnam Sengupta, Swapan Bhattacharya, "Formalization of UML Use Case Diagram- A Z Notation Based Approach", Proceedings of IEEE International Conference on Computing & Informatics (ICOCI'06), Kuala Lumpur, Malaysia, pp 61-66, June 6-8, 2006.
22. Ananya Kanjilal, Sabnam Sengupta and Swapan Bhattacharya, "Behavioral Specification of Object Oriented Systems using OCL", Proceedings of RTET-06, Recent Trends in Emerging Technologies, pp 31-35, Kolkata, February 25, 2006.
23. Sabnam Sengupta, Ananya Kanjilal, Swapan Bhattacharya, "Automated Translation of behavioral models using OCL and XML", Proceedings of IEEE TENCON, Melbourne, Australia, pp 86-91, 21-24 Nov, 2005.
24. Ananya Kanjilal, Swapan Bhattacharya, "Test Path Identification for Object Oriented systems using Extended Control Flow Graph", Proceedings of ADCOM-2004, 12th International Conference on Advanced Computing and Communication, Ahmedabad, India, December 15-18, 2004.
25. Swapan Bhattacharya, Ananya Kanjilal, "Static Analysis of Object Oriented systems using Extended Control Flow graph", Proceedings of IEEE TENCON 2004, Chiang Mai, Thailand, Vol-B, pp. B310-313, Nov 21-24, 2004.
26. Ananya Kanjilal, Goutam Kanjilal, Swapan Bhattacharya, "Extended Control Flow Graph: An Engineering Approach", Proceedings of CIT'03, Sixth International Conference on Information Technology, Bhubaneswar, India, pp. 151-156, December 22-25, 2003.