

Arijit Sengupta

530 N. Plymouth Rd.
Bloomington, IN 47408
(812) 855-2736 (daytime)
(812) 337-8579 (evenings)
(678) 362-6837 (mobile)
(812) 856-3355 (fax)
asengupt@indiana.edu
<http://www.kelley.iu.edu/asengupt>

Education

Indiana University, Bloomington, Indiana
MS and Ph.D., Computer Science [Minor: Library and Information Science] (1997)
Fellowship: Graduate Assistants in Areas of National Need (GAANN), 1995-1997.
Fields of Concentration: Databases, Document management, Human Computer Interaction
Dissertation: "DocBase: A database environment for structured documents"
Committee: Dr. Dirk Van Gucht (chair), Dr. Andrew Dillon, Dr. David Leake and Dr. Edward Robertson.

Indian Institute of Technology, Kharagpur, India
B.Tech., Computer Science (1992)
Thesis: "Design and Implementation of KOSET: Kharagpur Object-Oriented Software Engineering Tool"
Advisors: Dr. S. C. Desarkar and Dr. S. Subramanian

Academic Experience

Assistant Professor, Wright State University, Information Systems and Operations Management, Raj Soin College of Business.
June 2005 - present.
Courses taught:
Business Data Structures (MIS 215): Involves the creation and application of data structures in business applications.

Assistant Professor, Indiana University, Information Systems, Kelley School of Business, Indiana University.
Adjunct Assistant Professor, Department of Computer Science.
August 2001-May 2005.
Courses taught:
Object-Oriented Design and Development (BUS S420) Redesigned the course to include recent advances in Java and included more problem-solving techniques in the instruction.
Technologies for E-Business (BUS S511) New Course design, based on XML and related technologies, and development of complete E-business applications based on XML and the .NET framework, including ASP .NET and ADO .NET.
Advanced Web Applications Development (BUS S531) New Course design, based on J2EE and XML Web services.

Academic Experience (contd)

Assistant Professor, Georgia State University, Department of Computer Information Systems, Atlanta, Georgia. August 1999-July 2001.

Duties include teaching 4 course sections per year and conducting research.

Primary course taught:

Fundamentals of Database Management Systems (CIS8140) Restructured the course to include a balance between theory and practice in database management systems.

Director of Educational Development and Assistant Professor. Indiana University, Bloomington. Aug 1997-June 1999. Duties include teaching 4 courses a year, serving in committees and training new associate instructors. Following are details on courses taught:

Teaching in Computer Science (B599) 2 semesters. Designed the curriculum and developed topics for this seminar for new Associate instructors.

Data Structures (C343/H343) 1 semester. Standard CS2 curriculum using Java.

Designed the full course content to adapt to the new programming language.

Mastering the World-Wide-Web (A348/A548) 2 semesters. Revised the complete course content based on the changing nature of the Web. Automated the assignment submission and grading process.

Introduction to Databases (A114) 2 semesters. Designed this course from scratch, including writing the textbook for the course. Offered first time Fall 1998.

Introduction to Data Analysis (A113) 2 semesters. Designed this course from scratch, offered for the first time in Fall 1998.

Associate Instructor. Indiana University, Bloomington. Aug 1992-May 1996. Databases and Information Systems (C445-C446 sequence): revised the assignments and submission process, led discussion groups, and supervised course projects for graduate/undergraduate course.

Programming and Research Assistant. Indian Statistical Institute (ISI), Calcutta, India. Developed PC-based software for automated verification and inspection of multi-layered printed circuit boards using fast AI (artificial intelligence) techniques. May-July 1990.

Professional Experience

Instructional Consulting, United Parcel Service, Atlanta, GA. Provided instruction and training on Java and Object-Oriented Software Development. June-July 1999.

Software Engineering Consultant. Intelligent Micro Systems, Philadelphia, Pennsylvania. Designed components of PRODOC, a commercial workbench for software re(verse) engineering. May-August 1994.

Software Engineer. Oil and Natural Gas Corporation, Dehradun, India. Designed and developed a parser and compiler for C++ on the IBM mainframe system using Pascal. May-August 1991.

Publications

Refereed Scholarly

Arijit Sengupta and Sandeep Puroo. "Transitioning Existing Content: Inferring Organization Specific Documents" *Australian Journal of Information Systems* 8:1, September 2000. p 91-99

Publications (contd)

Arijit Sengupta and Andrew Dillon. "Extending SGML to Accommodate Database Functions: A Methodological Overview." Journal of the American Society of Information Systems (JASIS), special issue on structured information/standards for document architectures. pages 629-637, July 1997.

Refereed Professional/Practitioner

Peng Xu and Arijit Sengupta. "Provenance in Software Engineering – A Configuration Management View". Accepted for publication at AMCIS 2005 minitrack on Systems Analysis and Design. Nebraska, USA, Aug 11-14, 2005

Arijit Sengupta and Benjamin Murphy. "Mobistik - an Effective Small Footprint Mobile Device Communication Method". Accepted for publication at HCI International 2005, Las Vegas, USA, 22-27 July 2005.

Henry M. Kim, Arijit Sengupta and Joerg Evermann. "MOQ: Web Services Ontologies for QOS and General Quality Evaluations". Accepted for publication at ECIS 2005, Regensburg, Germany, May 26-28, 2005.

Sriram Mohan and Arijit Sengupta. "DocBase – the INEX Evaluation Experience". In N. Fuhr et al. (Eds). Advances in XML Information Retrieval. INEX 2004. LNCS 3493, pp. 261-275, March 2005.

Arijit Sengupta and Henry M. Kim. "SWAP – A Framework for Ontology Support in Semantic Web Applications". In AIS SIGSEMIS Bulletin, 2(1), pp. 48-52, March 2005.

Mehmet Dalkilic and Arijit Sengupta. "Design and Evaluation of CATPA: Curation Alignment Tool for Protein Analysis". In Proceedings, ACM Symposium on Applied Computing (SAC 2005). March 13-17, 2005, Santa Fe, New Mexico, USA pp190-194

Mehmet Dalkilic and Arijit Sengupta. "Circle: Design and Implementation of a Classifier Based on Circuit Minimization." In Proceedings, ACM Symposium on Applied Computing. March 13-17, 2005, Santa Fe, New Mexico, USA pp. 547-548.

Mehmet Dalkilic and Arijit Sengupta. "Semantic Thumbnails: Summarizing XML Documents for the Semantic Web". In Proceedings, XML 2004 Conference, Washington, DC. November 15-19, 2004.

Mehmet Dalkilic and Arijit Sengupta. "A Logic-theoretic Classifier called Circle". In Proceedings, 8th International Conference on Control Automation, Robotics and Vision (ICARCV 2004), Kunming, China, Dec 6-9 2004.

Malvika Gulati and Arijit Sengupta. "TRACS: Tractable Conference Scheduling" in Proceedings, Decision Sciences Institute Annual Meeting (DSI 2004). Boston, MA, USA. Nov 20-23, 2004. pp.3161-3166

Arijit Sengupta, Mehmet Dalkilic and James Costello. "Semantic Thumbnails – a Novel Method for Summarizing Document Collections" in Proceedings, 22nd ACM Annual International Conference on Design of Communication (SIGDOC 2004), Memphis, TN. USA. Oct 11-13, 2004. pp. 45-51

Raja Sooriamurthi, Arijit Sengupta, Suzanne Menzel, Katie Moor, Sid Stamm and Katy Borner. "Java Engagement for Teaching Training: An Experience Report" Proceedings the Frontiers in Education Conference (FIE), Savannah, Florida, October, 2004.

Arijit Sengupta, Sriram Mohan and Rahul Doshi. "XER – Extensible Entity Relationship Modeling" in J. Harnad et al. Eds. Proceedings of the XML 2003 Conference, Philadelphia, PA, USA. December 8-12 2003.

Publications (contd)

- V. Ramesh, Arijit Sengupta and Bryan Reinicke. "Querying XML Data – Does One Query Language Fit All?" In Proceedings of the 12th Annual Workshop on Information Technology and Systems (WITS'02). December 14-15, 2002. Barcelona, Spain. pp. 127-132.
- Arijit Sengupta and Mehmet Dalkilic. "DSQL – An SQL for Structured Documents". Lecture Notes in Computer Science vol. 2348, Proceedings of the 14th International Conference on Advanced Information Systems Engineering (CAISE'02). May 27-31, 2002, Toronto, Canada. pp.757-760
- Sandeep Puroo, Veda Storey, Arijit Sengupta and Melody Moore. "Reconciling and Cleansing: An Approach to Inducing Domain Models" in Proceedings, Workshop on Information Systems and Technologies (WITS), Brisbane, Australia, Dec 9-10, 2000.
- Arijit Sengupta and Peng Xu. "An Approach for a Reuseable Electronic Commerce System Model" in Proceedings of the 4th Multiconference on Systemics, Cybernetics and Informatics (SCI-2000). Orlando Florida, July 23-26, 2000.
- Arijit Sengupta and Sandeep Puroo. "Transitioning Existing Content: Inferring Organization-Specific Document Structures" in Proceedings of the conference on XML Meets Business Heidelberg, Germany, 4th May 2000. Selected for Best paper Award.
- Arijit Sengupta. "The complete closure: toward a unified view of structured document database objects" in Proceedings of the Fifth International Conference on Information Systems Analysis and Synthesis (ISAS '99). Volume 5, pp 269-273. Orlando, Florida. July 31-August 4, 1999
- Arijit Sengupta, David C. Wilson and David B. Leake. "Constructing and Transforming CBR Implementations: Techniques for Corporate Memory Management. Proceedings of the Workshop on Practical Case-Based Reasoning Strategies for Building and Maintaining Corporate Memories, Third International Conference on Case-Based Reasoning, Seeon, Germany, 1999. pp 9-18.
- Arijit Sengupta, David C. Wilson and David B. Leake. "On Constructing the Right Sort of CBR Implementation." Proceedings of the IJCAI-99 Workshop on Automating the Construction of Case Based Reasoners, Stockholm, Sweden, 1999.
- Arijit Sengupta. "Toward the union of databases and document management: The design of DocBase." In C.S.R. Prabhu, editor, *Databases for the Millennium 2000: Proceedings, 9th International Conference on Management of Data*, Hyderabad, India, pages 88-109 December 16-18, 1998.
- Arijit Sengupta and Andrew Dillon. "Query By Templates: A Generalized Approach for Visual Query Formulation for Text Dominated Databases." in *Proceedings, IEEE Forum on Research and Technology Advances in Digital Libraries (IEEE ADL'97)*, Washington DC, pages 36-47, May 7-9 1997.
- Arijit Sengupta. "Standardizing the Querying Process with SGML: The SQL DTD." In Tommie Usdin and Debbie Lapeyre, editors, *Proceedings of the SGML'96 Conference*. Graphic Communications Association, pages 323-337, November 1996.
- Pradip Bose, Santanu Chaudhuri, and Arijit Sengupta. "Automated Verification of Printed Circuit Boards: A Fast AI Approach." In Vijay P. Bhatkar and Kiran M. Rege, editors, *Frontiers in Knowledge Based Computing, Proceedings of the International Conference on Knowledge Based Computing Systems (KBCS90)*, pages 155-164, December 1990.

Publications (contd)

Invited Articles

Mehmet Dalkilic and Arijit Sengupta. "A Logic-theoretic Classifier called Circle". In Proceedings, 8th International Conference on Control Automation, Robotics and Vision (ICARCV 2004), Kunming, China, Dec 6-9 2004.

Arijit Sengupta. "Information Technology Innovations at the Decision Sciences Institute" *Decision Line*, 34(5) September 2003, pp. 14-18

Arijit Sengupta. "Demand More from Your SGML Database! Bringing SQL Under the SGML Limelight." <TAG> *The SGML Newsletter*, 9(4):pages 1-7, April 1996.

Books and Book Chapters

S. Mohan and A. Sengupta. "Conceptual Modeling for XML – A Myth or a Reality?" to appear. In Zongmin Ma, ed. Database Modeling for Industrial Data Management: Emerging Technologies and Applications. Idea Group Inc. 2005.

V. Ramesh and A. Sengupta. "J2EE Vs. .NET: An Application Development Perspective". In Carol Brown and Heikki Topi (eds.) IS Management Handbook 2003, Auerbach Publications, 2003.

Arijit Sengupta. "Database Concepts for marked-up textual documents" in Amita Chin, editor. Text Databases and Document Management: Theory and Practice. Idea Group Publishing. July 2000

Dennis Groth and Arijit Sengupta. "Introduction to database applications: a problem-solving approach." First edition. McGraw-Hill Publishing Company, December 1998.

Arijit Sengupta. "DocBase - A database environment for structured documents." *Ph.D. Thesis*, Computer Science Department, Indiana University, December 1997.

Journal Papers Under Review

Arijit Sengupta and Andrew Dillon. "Query By Templates: Using the Shape of Information to Search Next Generation Databases" – Under second round review at IEEE Transactions on Professional Communication, March 2005.

Henry M. Kim, Mark S. Fox and Arijit Sengupta. "How to build enterprise models to achieve compliance to standards or regulatory requirements (and share data)". Submitted to JAIS, March 2005

Arijit Sengupta, Sriram Mohan and S. Balaji. "XER – eXtensible Entity-Relationship Modeling for XML" Submitted to JAIS, March 2005.

Henry M. Kim, Arijit Sengupta and Mark S. Fox. "A Measurement Ontology Generalizable for Emerging Domain Applications on the Semantic Web." Submitted to Journal of Database Management, Feb 2005.

Henry M. Kim and Arijit Sengupta. "Extracting Knowledge from XML Document Repository: A Semantic Web-Based Approach". Submitted to Information Technology and Management, January 2005.

Arijit Sengupta. "X = R + δ : XML as an extension to Relations". Submitted to JIR, January 2005.

Arijit Sengupta, S. Mohan and V. Ramesh. "DocBase – a Document-Centric Approach to Managing XML Data." Submitted to Journal of Systems and Software, March 2005.

Publications (contd)

Working Papers

Sandeep Puro, Arijit Sengupta and Veda Storey. "ADAM: An Approach to Heuristically Inducing Domain Models." Working Paper, March 2005.

Arijit Sengupta and V. Ramesh. "Designing Document SQL (DSQL) – A Query Language for Structured Documents" Working Paper, March 2005.

Arijit Sengupta, Mehmet Dalkilic and Jim Costello. "Semantic Thumbnails – a novel method for summarizing document semantics". Working paper, Feb 2005.

Arijit Sengupta and Mehmet Dalkilic. "Circle – a logic-theoretic classifier for Association rule minimization". Working paper, to be submitted May 2005.

Arijit Sengupta and Malvika Gulati. "TRACS - An optimized conference schedule generation method". To be submitted, June 2005.

Arijit Sengupta, Dirk Van Gucht and Mehmet Dalkilic. "On Tractable Query Languages for Nested Relational Structured Under the Presence of Recursion and Union Types". Working Paper, 2003.

Other Publications and Presentations

Arijit Sengupta. XER – eXtensible Entity Relationship Modeling for XML. Demonstration Session, Workshop on Information Technologies and Systems (WITS 2003) December 13-14, Seattle, Washington, USA.

Arijit Sengupta. ADAM – an intelligent Domain Model Extractor. Demonstration Session, Workshop on Information Technologies and Systems (WITS 2000) December 9-10, Brisbane, Australia.

"Microsoft .NET Peer-to-peer award" – December 2003. Microsoft Corporation. One of four universities selected to Microsoft .NET peer-to-peer showcase at ICIS 2003, Seattle, WA, Dec 15-17, 2003.

"Microsoft .NET Curriculum Development Grant" – February 2002. Microsoft Corporation. William Perkins (project director), Arijit Sengupta (member of development team) and V. Ramesh. One time grant of \$30,000 cash, hardware and software valued at \$37,544, and training costs as requested.

"Incorporating Solaris and Java Technologies into the new MS Information Systems Curriculum" February 2002. Sun Microsystems – Arijit Sengupta (co-principal investigator), Ramesh Venkataraman and Tracy Connolly. One time infrastructure grant, approximate total dollar value of \$50,000.

Faculty Mentoring Grant. September 2000. Awarded \$10,000 for conducting research on "DocBase II" – the next generation digital library system.

TERA (Teaching Excellence Recognition Award), March 1998.

GAANN Fellowship, US Dept. of Education, 1995-1997.

Research and Infrastructure Grant, National Science Foundation, 1996.

Best B.Tech. Project Award, Indian Institute of Technology, Kharagpur, India, 1992; one of two best undergraduate projects among 200.

National Talent Search Scholarship, Dept of Education, India, 1986-92; best 100 scores in nationally conducted tests/interviews among 100,000 high school graduates in India.

Grants, Awards and Honors

Dissertation Committees

Ph.D. Thesis Chair. Indiana University Computer Science Department. Dissertation Committee Chair of Sriram Mohan. 2003.

Masters Thesis Committee Member. Indiana University Mime Program. Committee Member of Igal Elias. Feb 1998-June 1999.

Professional Services

Information Technology Committee Member, Decision Science Institute 1999-2003.
Program Committee Member: SCC 2005.

Reviewer.

Journals: Data Base, ISR, IJHCS, JAIS, JSS, ACM JERIC.

Conferences: ER 2000, WITS 2000, HICCS 2001, ICIS 2001, WITS 2002, SIGMOD 2002, DSI 2003, ECOIS 2004.

Technical Experience

8 years experience in instruction involving curriculum development, people and project management

8 years experience in application design using XML, SGML, .NET, J2EE, and OO Techniques

15 years experience in active software development (fluent in most current programming languages)

10 years experience Unix and Windows-based systems and networks administration

Led development of 10 major, and numerous smaller software projects

Taught courses in programming languages, .NET, J2EE, Semantic Web, database and software engg. *Technical Consultant.* Office of International Programs, Indiana University, Bloomington. Designed/ implemented/maintained Sybase databases with WWW interface. Jan 1995-Aug 1998.

Honorary / Part time positions

Systems Consultant. Leo R. Dowling International Center, Indiana University, Bloomington. Instructed new university students to use available computing infrastructure; installed/maintained hardware. May 1993-December 1996.

Database Systems Specialist. NAFSA: Assoc. of International Educators, Washington, D.C. Designed/implemented/maintained Sybase database with WWW interface. Aug 1995-December 1996.

Researcher. Department of Computer Science, Indiana University, Bloomington. Maturity assessment of software engineering processes. Aug 1993-May 1994.

Instructor. Indiana University, Bloomington. Summer 1995. Introduction to Software Systems (C212): Designed syllabus/tests/assignments involving C++ and Unix systems programming.

Associate Instructor. Indiana University, Bloomington. Aug 1992-May 1993.

Introduction to Computing (A106): Instructed lab sections and prepared practicals/tests.

Private Instructor. 1990-1995. Taught students of various levels physics, mathematics, introductory programming in C++, Java, COBOL, Fortran and assembly languages.

Residency Information

Permanent resident of the United States, Citizenship Application in progress.