Subhasis Dasgupta

CONTACT INFORMATION

Mail:
4161 Camino Islay
San Diego, CA, USA
Zip Code : 92122

Phone : +1 858-534-3693
Cell +1 858-366-3393
E-mail: sudasgupta@ucsd.edu
Skype: subhasis.dasgupta

RESEARCH INTERESTS

Database Development, Query Processing, IoT Data Management, Scientific Workflow, Automation and testing framework design, Information Security & Access Control, Polystore, Analytical Systems, Big Data, High Performance Computations, Graph Processing, Text Processing and Analytic, Software Life cycle Managemen, Computational Social Science, Digital Library Architecture.

RESEARCH & INDUSTRY EXPERIENCE

San Diego Supercomputer Center,
University of California, San Diego , La Jolla, California , USA
Computational and Data Science Research Specialist 4 **Since June 2017**

University of California, San Diego , La Jolla, California , USA
Assistant Project Scientist **Since January 2019**

Rady School of Management,
University of California, San Diego , La Jolla, California , USA
Lecturer **2019**

University of California, San Diego , La Jolla, California , USA
Postdoc Employee, **Oct 2015 - June 2017**
I was associated with the Data Science group at SDSC and developing a Polystore for Social Sciences. My research area includes management of heterogeneous data model, text and graph processing, information integration techniques to build data-driven solutions and performance monitoring of heterogeneous resources.

Indian Statistical Institute, Kolkata, West Bengal, India
Project Linked Research Fellow **June 2012 - Oct 2015**
Our research project mainly focused on restricted query processing for large digital library metadata ontology.

Kaavo Inc. & Kaavo Systems India Pvt. Ltd., U.S.A/India

Sr. Systems Engineer & Founder Director(India)
(**Startup Company)** **January 2008 - May 2012**
Kaavo is a start-up focused on leveraging open source software and utility/cloud computing to make it easier for individuals and Companies to have on-demand infrastructure and middle-ware for running secure and scalable web services and applications. Kaavo's core product is IMOD (Infrastructure and Middleware on Demand)

DataInfoCom Software Solutions Pvt. Ltd., Kolkata, India
Software Engineer (R&D) **May 2007 - January 2008**

Member of Core Product team , and develop a BI product (patent pending) for KPI improvement of the Fortune 500 Companies Contact Centre. My primary contribution was to develop a ETL for the companies flagship product OSMOSYS and develop java APIs for statistical predictions using ARIMA.

Marine Engineering and Research Institute (MERI), Indian Maritime University, Kolkata, India

Assistant Professor(Computer Science & Engg.) **May 2006 - May 2007**

Connectiva Systems Pvt. Ltd., Kolkata, India *Technical Specialist* **May 2006 - Aug 2006**

Centre for Mobile Computing and Communication., Jadavpur University, India

Research Engineer **Dec 2004 - May 2006**

Education

Jadavpur University , Kolkata, India

Doctorate of Philosophy in Engineering, 2012 - 2016

- Dissertation Topic: "`On the Design of an Ontology Based Access Control Model : A Digital Library Perspective`"
- Advisors: Aditya Bagchi & Chandan Mazumdar

Jadavpur University, Kolkata, India

Master of Computer Science & Engineering (M. E.), July 2005

- Dissertation Topic: "`Towards an Performance Based Scheduling in Grid Environment`"
- Advisor: Nandini Mukherjee

Asansol Engineering College (Burdwan University), West Bengal, India

Bachelor of Engineering (B. E.), Computer Science & Engineering, July, 2003

Software Skills

Programming Languages: Java, C++, Python, Perl, PL/Python
Database and Query Systems: PostgreSQL, Neo4j, SOLR
Compiler and Parser Tools: JavaCC
Scientific and Workflow Frameworks: ReACT (Genetic Framework), Nextflow, Snakemake
DevOps and Security Tools: Docker, Kubernetes, Prometheus, Trivy, Fluent Bit, GPG

Selected Research Platforms and Architectures

- **National Data Platform (NDP) Search:** Architected and developed an ontology-driven federated search engine enabling semantic discovery across distributed scientific datasets and APIs https://nationaldataplatform.org/.
- **Nourish Architecture:** Designed a privacy-preserving, AI-powered platform integrating conversational agents, knowledge graphs, and wearable sensor analytics to support food equity and public health research https://nourish.ucsf.edu/.
- **TemPredict Platform:** Led architecture and development of the TemPredict system for multimodal data integration from wearables to support predictive health modeling during COVID-19. https://osher.ucsf.edu/research/current-research-studies/tempredict
- **Quantum Data Hub (QuantumHub):** Designed and implemented a collaborative knowledge and data platform supporting quantum materials research, visualization, and metadata federation https://quantumdatahub.sdsc.edu/.
- **NSF Arctic Data Project(with The Battelle):** Architected a secure data federation and

access framework for NSF's Arctic research, supporting policy-aware data sharing across stakeholders.

Honors and Awards

- Frontiers of Innovation Scholars Program (FISP) Fellowship 2015 - 2016
- Special Mention Paper, EAIT, India, 2012
- Best Paper Award, ReTIS, India, 2007
- University of Potential Excellence Fellowship(U.G.C), Jadavpur University, 2004 - 2006
- Third Prize, National Level Science Model Competition, Department of Bio-technology, Govt. of India, 1994

Book

Subhasis Dasgupta, Aditya Bagchi *An ontology-based access control model: Digital Library Perspective* June 2019, LLAP Germany, ISBN 6139967090

Internet of Things and Data Mining for Modern Engineering and Healthcare Applications August 30, 2022 Chapman and Hall/CRC 1032108541

Patents

Data ingestion into a polystore US201762594408P

Query processing in a polystore US20220083552P

Journal Publications

Varner, K.J., Keeler Bruce, L., Soltani, S., Hartogensis, W., Dilchert, S., Hecht, F.M., Chowdhary, A., Pandya, L., Dasgupta, S., Altintas, I. and Gupta, A., 2025. Sex Differences in the Variability of Physical Activity Measurements Across Multiple Timescales Recorded by a Wearable Device: Observational Retrospective Cohort Study. Journal of Medical Internet Research, 27, p.e66231.

Burks, J.H., Bruce, L.K., Kasl, P., Soltani, S., Viswanath, V., Hartogensis, W., Dilchert, S., Hecht, F.M., Dasgupta, S., Altintas, I. and Gupta, A., 2024. General feature selection technique supporting sex-debiasing in chronic illness algorithms validated using wearable device data. npj Women's Health, 2(1), pp.1-11.

Keeler Bruce, L., Gonzlez, D., Dasgupta, S., & Smarr, B. L. (2024). Biometrics of complete human pregnancy recorded by wearable devices. NPJ Digital Medicine, 7(1), 207.

Kasl, P., Keeler Bruce, L., Hartogensis, W., **Dasgupta, S.**, Pandya, L.S., Dilchert, S., Hecht, F.M., Gupta, A., Altintas, I., Mason, A.E. and Smarr, B.L., 2024. Utilizing Wearable Device Data for Syndromic Surveillance: A Fever Detection Approach. Sensors, 24(6), p.1818.

Claure-Del Granado, Rolando, Juan C. Moya-Mamani, Rakesh Malhotra, and Subhasis Dasgupta. "Performance of an Artificial Intelligence-Generated Risk Score for AKI Prediction: FR-PO036." Journal of the American Society of Nephrology 35, no. 10S (2024): 10-1681.

Luo, Yunfei, Siwei Zhao, Subhasis Dasgupta, Tauhidur Rahman, and Rakesh Malhotra. "Real-Time Forecasting of Intradialytic Hypotension Using Deep Learning and Multimodal Data Integration: SA-PO405." Journal of the American Society of Nephrology 35, no. 10S (2024): 10-1681.

Bruce, L.K., Kasl, P., Soltani, S., Viswanath, V.K., Hartogensis, W., Dilchert, S., Hecht, F.M., Chowdhary, A., Anglo, C., Pandya, L. and **Dasgupta, S.**, 2023. Variability of temperature measurements recorded by a wearable device by biological sex. Biology of sex differences, 14(1), p.76.

Zhao, Siwei, Jason W. Yang, Jingyao Zhang, Pei Lun Lee, **Subhasis Dasgupta**, Jerome S. Tannenbaum, Joachim H. Ix, and Rakesh Malhotra. "Machine Learning Approach to Predict Hemoglobin Levels for Erythropoietin Dosing in Hemodialysis Patients: TH-PO043." Journal of the American Society of Nephrology 34, no. 11S (2023): 101.

Mason, A.E., Hecht, F.M., Davis, S.K., Natale, J.L., Hartogensis, W., Damaso, N., Claypool, K.T., Dilchert, S., **Dasgupta, S.**, Purawat, S. and Viswanath, V.K., 2022. Detection of COVID-19 using multimodal data from a wearable device: results from the first TemPredict Study. Scientific reports, 12(1), pp.1-15.

Mason, A. E., Kasl, P., Hartogensis, W., Natale, J. L., Dilchert, S., **Dasgupta, S.**, Purawat, S., Chowdhary, A., Anglo, C., Veasna, D., Pandya, L. S., Fox, L. M., Puldon, K. Y., Prather, J. G., Gupta, A., Altintas, I., Smarr, B. L., & Hecht, F. M. (2022). *Metrics from Wearable Devices as Candidate Predictors of Antibody Response Following Vaccination against COVID-19: Data from the Second TemPredict Study.* Vaccines, 10(2), 264. https://doi.org/10.3390/vaccines10020264

Amarnath Gupta, **Subhasis Dasgupta**, Aditya Bagchi: PROFORMA: Proactive Forensics with Message Analytics. IEEE Security & Privacy 15(6): 33-41 (2017)

Subhasis Dasgupta, Pinakpani Pal, Chandan Mazumdar, Aditya Bagchi, *Resolving Authorization Conflicts by Ontology Views for Controlled Access to a Digital Library*, Journal of Knowledge Management, Vol. 19 Iss: 1, pp.45 - 59

Ranjan Kumar Maji, Arijita Sarkar, Sunirmal Khatua, **Subhasis Dasgupta**, Zhumur Ghosh: *PVT: an efficient computational procedure to speed up next-generation sequence analysis.* BMC Bioinformatics 15: 167 (2014)

Subhasis Dasgupta, Aditya Bagchi: *Controlling Access to a Digital Library Ontology - A Graph Transformation Approach.* International Journal of Next-Generation Computing (IJNGC) 5(1) (2014), pp 22 - 42

Conference Publications

Mondal, Safikureshi, Subhasis Dasgupta, and Amarnath Gupta. "Minimally Supervised Hierarchical Domain Intent Learning for CRS." arXiv preprint arXiv:2505.02209 (2025).

Dasgupta, S., Taparia, H., Schmidt, L., & Gupta, A. (2025). MISCON: A Mission-Driven Conversational Consultant for Pre-Venture Entrepreneurs in Food Deserts. arXiv preprint arXiv:2501.14954.

Zhang, Zhongyang, Shuyang Cui, Kaidong Chai, Haowen Yu, Subhasis Dasgupta, Upal Mahbub, and Tauhidur Rahman. "V2CE: Video to Continuous Events Simulator." IEEE International Conference on Robotics and Automation in PACIFICO Yokohama May 13th to 17th, 2024

Das, Subhashis, Arindrajit Pal, and Subhasis Dasgupta. "Attack Generation for Smart Grid Network Using GAN Simulator." 2024 4th International Conference on Computer, Communication, Control & Information Technology (C3IT). IEEE, 2024.

Zheng, Xiuwen, Subhasis Dasgupta, and Amarnath Gupta. "P2kg: declarative construction and quality evaluation of knowledge graph from polystores." In European Conference on Advances in Databases and Information Systems, pp. 427-439. Cham: Springer Nature Switzerland, 2023.

Purawat, Shweta, Subhasis Dasgupta, Jining Song, Shakti Davis, Kajal T. Claypool, Sandeep Chandra, Ashley Mason et al. "TemPredict: A Big Data Analytical Platform for Scalable Exploration and Monitoring of Personalized Multimodal Data for COVID-19." In 2021 IEEE International Conference on Big Data (Big Data), pp. 4411-4420. IEEE, 2021.

Purawat, Shweta, Subhasis Dasgupta, Luke Burbidge, Julia L. Zuo, Stephen D. Wilson, Amarnath Gupta, and Ilkay Altintas. "Quantum Data Hub: A Collaborative Data and Analysis Platform for Quantum Material Science." In International Conference on Computational Science, pp. 656-670. Springer, Cham, 2021.

Subhasis Dasgupta, Amarnath Gupta Discovering Interesting Subgraphs in Social Media Networks ASONAM 2020.

Junan Gao, Subhasis Dasgupta, Amarnath Gupta. Multi-Model Investigative Exploration of Social Media Data with BOUTIQUE: A Case Study in Public Health. In 2019 15th International Conference on eScience (eScience), 21317.

Dasgupta, Subhasis, Aditya Bagchi, and Amarnath Gupta. Ingesting High-Velocity Streaming Graphs from Social Media Sources. In 2019 15th International Conference on eScience (eScience)

Subhasis Dasgupta, Charles McKay, Amarnath Gupta: Generating polystore ingestion plans - A demonstration with the AWESOME system. BigData 2017: 3177-3179

Amarnath Gupta, Alice Z. Wang, Kai Lin, Haoshen Hong, Haoran Sun, Benjamin L. Liebman, Rachel E. Stern, Subhasis Dasgupta, Margaret E. Roberts: Toward Building a Legal Knowledge-Base of Chinese Judicial Documents for Large-Scale Analytics. JURIX 2017: 135-144

Subhasis Dasgupta, Kevin Coakley, Amarnath Gupta: *Analytics-Driven Data Ingestion and Derivation in the AWESOME Polystore* IEEE BIGDATA 2016

Subhasis Dasgupta, Amarnath Gupta: *Analyzing Community Dynamics In Social Media* First International Workshop on Social Data Analytics and Management, co-located with VLDB 2016, India

Subhasis Dasgupta, Aditya Bagchi: *A Graph-Based Formalism for Controlling Access to a Digital Library Ontology* CISIM 2012: 111-122

Subhasis Dasgupta; Aditya bagchi, *Resolving conflicts between role-hierarchy and concept-hierarchy in a Digital Library ontology,* Emerging Applications of Information Technology (EAIT), 2012 Third International Conference on , vol., no., pp.443,446, Nov. 30 2012-Dec. 1 2012
doi: 10.1109/EAIT.2012.6408004

Subhasis Dasgupta, Aditya Bagchi: Controlled Access over Documents for Concepts Having Multiple Parents in a Digital Library Ontology. Computer Information Systems - Analysis and Technologies - 10th International Conference, CISIM 2011, Kolkata, India, December 14-16, 2011. Proceedings: Communications in Computer and Information Science (CCIS) Volume 245, PP 277-285, Springer
http://dx.doi.org/10.1007/978-3-642-27245-5_33

Sunirmal Khatua, Subhasis Dasgupta, Nandini Mukherjee: *Pervasive Access To The Data Grid.* Proceedings of the 2006 International Conference on Grid Computing Applications: GCA 2006 Las Vegas, Nevada, USA, June 26-29, 2006 : PP 197-203, CSREA Press.
http://dblp.uni-trier.de/rec/bib/conf/gca/KhatuaDM06

Sarbani Ghosh , **Subhasis Dasgupta**, Nanadini Mukherjee *Performance Tuning in Grid Environment*, National Conference on Networks and Distributed Systems(Networks 2005), Osmania University , Hyderabad, 25th Feb 2005.

Professional Services

Tutorial Chair, Fourth International Conference on Emerging Applications of Information Technology (EAIT 2014), Indian Statistical Institute, Kolkata, India

Finance Chair, Ninth International Conference on Information Systems Security(ICISS 2013, Indian Statistical Institute, Kolkata, India

Program Committee Member , ICDE 2017, EAIT 2014, EAIT 2012 ,

Member IEEE, IEEE Computer Society, ACM, ACM SIGMOD, Computer Society of India(CSI)

Managing Committee Member , CSI Kolkata Chapter, 2012 - 2013

Reviewer IEEE Transaction on Parallel and Distributed Systems,
IEEE Transactions on Dependable and Secure Computing,
IEEE Access
Future Generation Computer Systems, ELSEVIER

Mentorship

- Tejendra Prasad Patel, MCA, Vaishnav College,University of Madras 2008 (Automated Application Deployment on Cloud)
- Akansha Gupta, MCA, Vaishnav College,University of Madras 2008 (Automated Application Deployment on Cloud)
- Raghu Teja, M.Tech (With Professor A Bagchi), 2013 Indian Statistical Institute, Kolkata, "Ontology Based Access Control"
- Roukna Sengupta, B.Tech (With Professor A Bagchi & Professor. Pal)(Computer Science), 2013 Indian Statistical Institute, Kolkata, "Access Control for Polyhierarchic Structure "
- Junan Guo, (With Dr. A Gupta) University of California, San Diego, "Polystore Middle-ware Development"
- Linfeng Zhang, MBA, Rady School of Management, University of California, San Diego 2019
- Ziyao Chen, MBA, Rady School of Management, University of California, San Diego 2019
- Zhenyang Sun, MBA, Rady School of Management, University of California, San Diego 2019
- Shumeng Shi, MBA, Rady School of Management, University of California, San Diego 2019