Dr Sonal Kanungo

Associate Professor

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https://www.researchgate.net/profile/Sonal_Kanungo
https://scholar.google.co.in/citations?user=VPkCI84AAAAJ&hl=en

Area of Research Interest

Concurrency Control in DBMS, NOSQL, ODBMS and Cloud Computing.

Research Area

Research was carried out through Simulations in various Concurrency Control Techniques; including Timestamp, Two-phase locking, Optimistic and Multiversion concurrency control based on pessimistic and optimistic concurrency control in OODBMS. The simulations were done in various multiversion protocols like MVTSO, MV2PL, MV mixed method in Object oriented database.

The salient details of the proposed Concurrency Control Technique are as follows:

- It introduces the simple model for database systems which permit us to state a new correctness criterion clearly.

- It reduces the problems of MV2PL by modifying the execution rules, which guarantees the serializability of concurrent execution of update transactions.

- It enhances the level of the concurrency of class operations and the object operations by using the semantics of object-oriented components.

- It ensures consistency of the data and the schema of OODBMS by presenting a separate compatibility matrix for checking inter-class dependencies between classes which are related by inheritance, aggregation, and association.

- It generates smaller number of waits, deadlocks and rollbacks and less aborts. Deadlock handling by HPCCT is giving better performance.

Qualification

PhD   Veer Narmad South Gujarat University, Surat, 2018
            Thesis: High Performance Concurrency Control Technique for OODBMS

M.Sc (IT)   Institute of Computer Science and Electronics, DAVV Indore, 2002 - 70.34% & GGPA 7.41

BCA   IPS Academy, Devi Ahilya Vishwa Vidyalaya, Indore, 2000

Research Publications

1. 'Effective Correctness Criteria for Serializability in Multiversion Concurrency Control Technique', International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN 2278-3075 (online), Volume-8 Issue-12 October 2019, Page 1647-1653, Impact Factor 5.54, Scopus Indexed.

2. 'Analysis and Comparison of Concurrency Control Techniques', International Journal of Advanced Research in Computer and Communication Engineering, ISSN Online 2278-1021 Print ISSN 2319-5940, Vol. 4, Issue 3, March 2015. Page 245-251. Impact Factor 6.672.

3. 'Comparison of Concurrency Control and Deadlock Handing in Different OODBMS', International Journal of Engineering Research & Technology (IJERT), ISSN Online: 2278-0181, Vol. 5 Issue 05, May-2016, Page 492-498, Impact Factor 1.76.

4. 'Semantic Model for Complex Object in Object Oriented Database', UGC Approved International Journal of Advanced Research in Computer Science (IJARCS), ISSN 0976-5697 Volume 8, No 5, May-June 2017. Page 1651-1655. Impact Factor 0.765.

5. 'Performance Analysis of Multiversion Concurrency Control Algorithms', UGC Approved International Journal of Computer Engineering and Applications (IJCEA), ISSN 2321-3469, Vol XI, Issue IX September 2017, Page 1-11. Impact Factor 5.859

6. 'Issues with Concurrency Control Techniques', International Journal of Electrical Electronics & Computer Science Engineering Special Issue - AET 2017, Pune. ISSN Online 2348-2273 and Print ISSN 2454-1222. Page 1-6. Impact Factor 4.255.

7. 'Multiversion Concurrency Control for Object Oriented Database Management System', International Journal of Engineering Research in Computer Science and Engineering (IJERCSE), ISSN 2394-2320, Vol 4 Issue 10 Oct 2017. Page 24-27. Impact Factor 4.8.

8. 'Evaluation of Multiversion Concurrency Control Techniques', UGC Approved International Journal of Research In Electronics And Computer Engineering (I2OR) IJRECE ISSN Online 2348-2281 and ISSN Print 2393-9028 Vol. 6 Issue 3 (July - September 2018). Page 807-813. Impact Factor 4.305

9. 'Covid-19: Impact and New Normal', International Journal of Security and Privacy in Pervasive Computing Volume 13,IGI global, Issue 1, January-March 2021.Pages 57-68.

Communications

1. Concurrency Verses Consistency in Various NoSQL Database Management Systems

Workshops, Orientation and MOOC's by MHRD, ATAL and IIT

- 1 Week online FDP on Data Science at Crescent University Chennai from AICTE Training and Learning (ATAL) Academy from 21 Sep to 25 Sep 2020.
- Online FDP on Artificial Intelligence at Govt. Women's Polytechnic College, Thrissur from AICTE Training and Learning (ATAL) Academy from 14 Sep to 18 Sep 2020.
- 1 Week UGU Sponsored Workshop on e-content, OER and MOOCs from HRDC DAVV Indore-29 Apr-4 May 2020
- 2 Weeks UGC Sponsored Refresher Course from CPDHE, University of Delhi – 31 May 2019 to 14 June 2019.
- 8 Weeks course on Cloud Computing by NPTEL of SWAYAM – Feb to Apr 2019
- 4 Weeks UGU Sponsored 119th Orientation Program from HRDC DAVV Indore – 10 May 2018 to 6 June 2018
- 10 Days Workshop on DBMS under National Mission on Education through ICT(MHRD) conducted by IIT Bombay 21 May 2013-31 May 2013
- 2 Weeks Workshop on Programming Language under National Mission on Education through ICT(MHRD) conducted by IIT Bombay 20 May 2014-15 June 2014

Work Experience as Assistant Professor

Associate Professor in **D.P.G. Institute of Technology & Management, Gurgaon**

Period: Aug 2019 – Till date

The current responsibilities include

- Academics of B.Tech (CSE), B.Tech(Mech),B.Tech(ECE),Mtech(CSE) and BCA courses.
- Providing Project guidance to B.Tech (CSE) and M.Tech (CSE) students.
- **Heading** the **Innovation Cell** of the Institute and leading various activities as prescribed by IIC MHRD.
- **Assistant Professor** in **Smt. Z. S. Patel College of Management & Technology, Surat**

Period: Aug 2010 – July 2019.

Worked as **Head** of the **Department** for the BCA section, fulfilling responsibilities of preparation of timetable, examination schedule, Internal marking including overall coordination of department.

Teaching various subjects in respective semesters:

Lecturer in **Sheth P.T.Mahila College, Surat**

Period: 25/9/2009-31/3/2010

Patent

Australian Patent 2020103810, "Method for detecting fake news using grammatic transformation on neural network computer readable medium", 27 Jan 2021.

Technical Knowledge

Data Structures, Database Management Systems, Object Oriented Database Management Systems Principles of Computer Architecture and Computer Organization Fundamentals of Computer Networks, Software Engineering, Artificial Intelligence, Concepts of Operating Systems, Computer Graphics, Object Oriented Programming, Client Server Computing, Mobile Communications

Administrative Experience

- Paper Examiner for all three years of BCA of Veer Narmad South Gujarat University, Surat.
- Practical Examiner for BCA, Veer Narmad South Gujarat University.
- Practical Examiner for PGDCA Veer Narmad South Gujarat University.
- Examination Paper setter for First & Second year BCA.
- Internal superintendent for BCA Examination at Smt Z.S.Patel College 2012-2018.
- Internal superintendent for BCOM Examination at Smt Z.S.Patel college 2013-2015.
- External superintendent at Udhna College in 2010-2011.
- Worked as polling officer in 2013 & 2018 elections.

Work Experience as Web Designer

M/s. Aastha Info Marks Pvt. Ltd. Surat

January 2008 – October 2008

Work Experience includes making Website in Flash and Dreamweaver.

Web-Vision Technocrats Pvt. Ltd. Indore

30-9-2002 to 1-03-2003

Work Experience includes Web Page designing, preparing Banners and Pages for advertisement.

Membership	
Member of ACM digital Library, ACM India	

Seminars and Conferences

- Poster presentation on 'e-Governances' in VNSGU Surat
- Paper Presentation on U.G.C. Sponsored State Level Seminar on **'**_Integration of ICT tools in Education'_
- Participated in State Level Seminar on _'21st Century Guru'_ (Organized by Sheth P.T. Mahila College of Arts & Home Science.
- Participated National Seminar on Natural Language Processing and Data Mining (Organized by Department of Computer Science VNSGU)
- Participated National conference on Emerging Trends in Information Technology (Organized by Department of Computer Science VNSGU)

Skill Set

Visual Tools	FrontPage, Flash MX, Dreamweaver, Fireworks, Coreldraw12, Photoshop
Programming Languages	JAVA, C++, C, Pascal, Visual basic, Visual basic.net,Visual C++,PHP
DBMS	Oracle, MS Access, SQL server, PostgreSQL, Versant, Objectstore, Objectivity, Gemstone
Scripting Languages	HTML, ASP, ASP.Net, Java Script, JQuery, Bootstrap
Operating Systems	WINDOWS 9X, WIN 2000, MS-DOS, UNIX, LINUX
Others	MS-Office, Open Office, Operating System, MATLAB

Technical Courses/ Certificates

MultiMedia from Tata Infotech, Indore

ASP & **VB.Net** from Tata InfoTech, Indore

Multimedia from Arena Multimedia, Indore

ASP.Net from BCM, Surat

Other Academics

Higher Secondary School Certificate Examination (M.P. Board) - XII

Passed with First Division (71.87%)

High School Certificate Examination (M.P. Board) - X

Passed with Distinction (81.53%) and secured 1st position at the district level

Personal Details

Spouse	Akash Sharma, Sterlite Technologies Limited
Date of Birth	May 4th, 1977

Dr Sonal Kanungo

PC 1 – 1203, Pearl Court, Essel Tower, MG Road, Gurugram 122002

Reference

1. **Dr. R.D. Morena**
   Professor, Department of Computer Science, Veer Narmad South Gujarat University, Surat
   9824118895, rdmorena@vnsgu.ac.in
2. **Prakash Rana**
   Assistant Professor, Department of Computer Science, Veer Narmad South Gujarat University, Surat
   9824522335, pcrana@gmail.com
3. **Dr. Preeti Saxena**
   Professor, School of Computer Science and IT, Devi Ahilya Vishva Vidhyalaya, Taxshila Parisar, Indore
   9827071501, psaxena.scs@dauni.ac.in