



# Sudebkumar Prasant Pal

*“Work (with desire) is verily far inferior to that performed with the mind undisturbed by thoughts of results. O Dhananjaya, seek refuge in this evenness of mind. Wretched are they who act for results.”*

— Sloka 49, Chapter II, Srimad Bhagavad Gita

*“Endued with this evenness of mind, one frees oneself in this life, alike from vice and virtue. Devote thyself, therefore, to this Yoga. Yoga is the very dexterity of work.”*

— Sloka 50, Chapter II, Srimad Bhagavad Gita

## Personal Information

Name	Sudebkumar Prasant Pal
Designation	Professor
Nationality	Indian
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## Education

- 1991 **Ph.D.**, *Department of Computer Science and Automation, IISc Bangalore.*  
Ph.D. Thesis Title: Weak visibility and related problems on simple polygons
- 1986 **M.Tech.**, *Department of Computer Science and Engineering, IIT Kanpur.*  
M.Tech. Thesis Title: A concurrent object oriented programming system
- 1983 **B.Tech.**, *Department of Computer Science and Engineering, IIT Kharagpur.*
- 1978 **Higher Secondary School Certificate**, *Maharashtra State Board, Nagpur Division.*
- 1976 **Secondary School Certificate**, *Maharashtra State Board, Pune Division.*

## Work Experience

- 1990 – 1993 **Lecturer**, *Indian Institute of Technology, Kharagpur.*
- 1993 – 1998 **Assistant Professor**, *Indian Institute of Technology, Kharagpur.*
- 1998 – 2004 **Associate Professor**, *Indian Institute of Technology, Kharagpur.*

2004 – now **Professor**, *Indian Institute of Technology*, Kharagpur.

## Courses Taught

- Autumn 2002 Graduate level core course on Algorithms
- Spring 2003 Computational Complexity, Computational Geometry
- Autumn 2003 Advances in Algorithms
- Spring 2004 Quantum Computing and Quantum Information Processing
- Autumn 2004 Advances in Algorithms
- Spring 2005 Quantum Computing and Quantum Information Processing
- Autumn 2005 Computational Complexity
- Spring 2006 Quantum Computing and Quantum Information Processing
- Autumn 2006 Computational Complexity
- Spring 2007 Quantum Computing and Quantum Information Processing
- Autumn 2007 Special Topics in Algorithms
- Spring 2008 Quantum Computing and Quantum Information Processing
- Autumn 2008 Algorithms II
- Spring 2009 Computational Geometry
- Autumn 2009 Algorithms II
- Spring 2010 Computational Geometry
- Autumn 2010 Algorithms II
- Autumn 2014 Algorithms II
- Spring 2014 Special Topics in Algorithms
- Autumn 2015 Algorithms II
- Spring 2016 Programming and Data Structures
- Autumn 2016 Algorithms II
  
- Spring 2020 Approximation and Online Algorithms (CS60023, LTP 3-0-0, 3 credits), Lectures Mondays, Thursdays and Fridays, 5 pm - 6 pm, Room 108 CSE, First lecture January 02, 2020.
- Spring 2019 Approximation and Online Algorithms (CS60023, LTP 3-0-0, 3 credits), Lectures Mondays, Thursdays and Fridays 5 pm - 6 pm.
- Autumn 2018 Approximation and Online Algorithms (CS60023, LTP 3-0-0, 3 credits), Lectures Mondays 8-10 am, Tuesdays 12 noon, Venue CSE 108, FIRST LECTURE July 17, 2018, 12 noon. Adjunct faculty Prof. Subir Kumar Ghosh
- Spring 2018 Computational Geometry (CS60064, LTP 3-0-0, 3 credits, cse moodle course CS60064-CG), elective, classes start January 04, 2017, 5 pm in CSE 120, Ground Floor, Thursday
- Autumn 2017 Approximation and Online Algorithms (CS60023, LTP 3-0-0, 3 credits), Lectures Wednesday 10 am, Thursdays 9 am and Fridays 11 am.
- Spring 2017 Computational Geometry (CS60064, LTP 3-0-0, 3 credits, cse moodle course CS60064-CG), elective, classes start January 05, 2017, 5 pm in CSE 120, Ground Floor, Thursday

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## Research Interests

Keywords Computational Geometry, Approximation Algorithms, Visibility and Reflection Paths, Art Gallery Problem

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## Selected List of Publications

- 1 **Niranjan Balachandran, Rogers Mathew, Tapas Kumar Mishra, Sudebkumar Prasant Pal**, *System of unbiased representatives for a collection of bicolourings.*, Discrete Applied Mathematics (Elsevier) (2019), now online. <https://doi.org/10.1016/j.dam.2019.03.021>, 2009.
- 2 **Niranjan Balachandran, Rogers Mathew, Tapas Kumar Mishra and Sudebkumar Prasant Pal**, *Induced-bisecting families of bicolourings for hypergraphs*, Discrete Mathematics 341, pp. 1732-1739, (Elsevier) , 2018.
- 3 **Niranjan Balachandran, Rogers Mathew, Tapas Kumar Mishra and Sudebkumar Prasant Pal**, *Bisecting and D-secting families for set systems*, Discrete Applied Mathematics, now online, <https://doi.org/10.1016/j.dam.2017.05.005>, (Elsevier), 2017.
- 4 **Tapas K. Mishra and S. P. Pal**, *Lower bounds for Ramsey numbers for complete bipartite graphs and 3-uniform tripartite subgraphs*, Journal of Graph Algorithms and Applications (special issue for WALCOM 2013), 17(6):671-688, 2013.
- 5 **Arindam Khan, S. P. Pal, Mridul Aanjaneya, Arijit Bishnu, Subhas C. Nandy**, *Diffuse Reflection Diameter and Radius for Convex-Quadrilateralizable Polygons*, Discrete Applied Mathematics, 161(10-11):1496-1505, 2013.
- 6 **Subir Kumar Ghosh, Partha P. Goswami, Anil Maheshwari, Subhas C. Nandy, S. P. Pal, Swami Sarvattomananda**, *Algorithms for computing diffuse reflection paths in polygons*, The Visual Computer, 28(12): 1229-1237, 2012.
- 7 **Saswata Shannigrahi and S. P. Pal**, *Efficient Prufer-like coding and counting labelled hypertrees*, Proceedings of the International Symposium on Algorithms and Computation, ISAAC 2006, LNCS 4288:141-152, 2006, (revised version in special issue of Algorithmica, vol. 54, pp. 208-225, Springer). 2009
- 8 **Sudhir Kumar Singh, S. P. Pal, Somesh Kumar and R. Srikanth**, *A combinatorial approach for studying LOCC transformations of multipartite states*, Journal of Mathematical Physics 46, 122105, 2005.
- 9 **S. P. Pal, Siddhartha Brahma and Dilip Sarkar**, *A linear worst-case lower bound on the number of holes in regions visible due to multiple diffuse reflections*, Journal of Geometry, Vol. 81, No. 1-2, December 2004, Birkhauser-Verlag, 2004.
- 10 **D. Chithra Prasad, S. P. Pal and T. K. Dey**, *Visibility with multiple diffuse reflections*, Computational Geometry: Theory and Applications, 10:187-196, 1998.
- 11 **B. Aronov, A. Davis, T. K. Dey, S. P. Pal and D. Chithra Prasad**, *Visibility with multiple reflections*, Discrete & Computational Geometry, 20(61):61-78, 1998. (preliminary version in Proceedings of SWAT 1996, LNCS 1097:284-295)
- 12 **B. Aronov, A. Davis, T. K. Dey, S. P. Pal and D. Chithra Prasad**, *Visibility with one reflection*, Discrete & Computational Geometry, 19(4):553-574, 1998. (preliminary version in Proceedings of SoCG 1995:316-325)

- 13 **S. K. Ghosh, A. Maheshwari, S. P. Pal, S. Saluja and C. E. Veni Madhavan**, *Characterizing and recognizing weak visibility polygons*, Computational Geometry: Theory and Applications, 3:213-233, Elsevier, North-Holland, 1993.  
(preliminary version in the Proceedings of CCCG 1990, pp. 93-97)
- 14 **S. Biswas, D. Chithra Prasad and S. P. Pal**, *Recognizing weakly convex visible polygons*, Computational Geometry: Theory and Applications, 10:171-186, Elsevier, North-Holland, 1998.  
(preliminary version in Proceedings of FSTTCS 1994, LNCS 880:181-192, Springer-Verlag)
- 15 **S. K. Ghosh, A. Maheshwari, S. P. Pal and C. E. Veni Madhavan**, *An algorithm for recognizing palm polygons*, The Visual Computer: Special issue on Computational Geometry, 10:443-451, Springer-Verlag, 1994.  
(preliminary version in the Proceedings of CCCG 1990, pp. 246-251)
- 16 **R. K. Pal, S. P. Pal and A. Pal**, *An algorithm for finding a non-trivial lower bound for channel routing*, INTEGRATION: The VLSI Journal, 25:71-84, Elsevier, North-Holland, 1998.
- 17 **S. P. Pal, B. Dasgupta and C. E. Veni Madhavan**, *Optimal polygon placement by translation*, International Journal of Computer Mathematics, 52:139-148, Gordon and Breach Science Publishers, 1994.  
(preliminary version in the Proceedings of CCCG 1990, pp. 164-171)
- 18 **Smruti Sarangi, P. N. Sireesh and S. P. Pal**, *A Scalable, Efficient and General Monte Carlo Scheme for Generating Synthetic Web Request Streams*, International Journal of Computer Systems Science and Engineering, 18(3):121-128, CRL Publishing Ltd., UK, 2003.
- 19 **S. P. Pal, Rakesh Kumar Koul, Frahad Musadeekh, P. H. D. Ramakrishna and Hironmay Basu**, *Computations that require higher than double precision for robust and exact decision making*, International Journal of Computer Mathematics, 81(5):595-605, 2004.
- 20 **Siddhartha Brahma, P. H. D. Ramakrishna and S. P. Pal**, *A new and novel method for computing an upper bound on the distance of an approximate zero from an exact zero of a univariate polynomial*, International Journal of Computer Mathematics, 81(12):1549-1557, 2004.
- 21 **S. P. Pal, Rajiv Ranjan Suman, G. S. Anil Kumar and Ruchi Malhotra**, *Virtual video caching: A scalable and generic technique for improved quality of video service*, Journal of High Speed Networks, 13(4):249-263, IOS Press, 2004.

## Honours, Achievements, and Positions Held

- 1) Erdos number is 2.
- 2) Ranked 132 (All India Rank) in IIT Joint Entrance Examination (IIT-JEE), 1978.
- 3) Ranked 10<sup>th</sup> on the merit list of Higher Secondary School Certificate (HSSC) Exam, Maharashtra State Board, Nagpur Division, 1978.
- 4) Received the Rajiv Gandhi Research Grant for Innovative Ideas in Science and Technology, in 1993, from The Rajiv Gandhi Foundation and Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Jakkur, Bangalore.
- 5) Worked as Visiting Associate Professor in the Mathematics and Computer Science department in the University of Miami, Coral Gables, Miami, Florida - 33124, USA, during the period from August 1999 to May 2000.
- 6) Member of Programme Committee for FSTTCS 2004, Chennai

- 7) Member of National Advisory Committee for ISCQI 2008, IOP Bhubaneswar
- 8) Member of Programme Committee for WALCOM 2008, ISI Kolkata
- 9) Member of Programme Committee for WALCOM 2012, Dhaka, Bangladesh
- 10) Co-Chairman of Organizing Committee for WALCOM 2013, IIT Kharagpur
- 11) Co-Chairman of Programme Committee for WALCOM 2014, IIT Madras
- 12) Member of Programme Committee for CALDAM 2015, IIT Kanpur
- 13) Member of Programme Committee for CALDAM 2016, Thiruvananthapuram
- 14) Member of Programme Committee for CALDAM 2017, Goa
- 15) Member of Executive Council of Indian Association for Research in Computing Science (IARCS)
- 16) Convenor of Advisory Committee for Centre for Theoretical Studies, IIT Kharagpur