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DESIGNATIONS           • Adjunct Professor, Bhaskaracharya Pratishthana, Pune, India

QUALIFICATIONS        • Ph.D.(Operator Theory)  
                                  Title of the Thesis: Completely and Alternatingly Hyperexpansive Operators  
                                  Adviser: Professor Ameer Athavale

TEACHING                • Undergraduate Classes : **37 Years**  
 EXPERIENCE            • Postgraduate Classes: **30 Years**  
                                  • Math Olympiad Trainer : **28 Years**

SPECIALIZATION       • Operator Theory  
                                  • Functional Analysis

INTERESTS              • Combinatorics  
                                  • Differential Geometry  
                                  • Mathematics Education

PUBLICATIONS        **Research Papers**

1. Completely hyperexpansive operator tuples (with Ameer Athavale), Positivity, 3(1999), 245-257
2. Completely and alternatingly hyperexpansive operators (with Ameer Athavale), J. Operator Theory, 43 (2000), 43-68
3. On a class of alternatingly hyperexpansive subnormal weighted shifts (with Ameer Athavale and A. Ranjekar), Irish Math. Soc. Bulletin, 53 (2004), 35-52
4. A theorem of Vito Volterras, Resonance 12, Vol. 1, (2007), 76-79
5. **Curriculum and Pedagogy in Mathematics: A Focus on Tertiary Level (with Geetha Vankar and Bhabha Kumar Sarma), Mathematics Education in India, Status and Outlook, HBCSE, TIFR, Mumbai, May 2012, 127-150**
6. A rigidity theorem for spherical hyperexpansions (with Sameer Chavan), Complex Analysis and Operator Theory, Vol. 7(5) (2013) 1545-1568
7. **Beauty of Mathematics and Mathematical Theories, Compass Vol. 6(1) (2013), 27-31**
8. Completely monotone functions of finite order and Aglers conditions (with Sameer Chavan), Studia Mathematica, 226(3), (2015), 229-258
9. Completely hyperexpansive tuples of finite order (with Sameer Chavan), Journal of Mathematical Analysis and Applications, Journal of Mathematical Analysis and Applications 447 (2017) pp. 1009-1026
10. **Madhava Mathematics Competition, a Recent Initiative in India, Competitions for Young Mathematicians: A Perspective from Five Continents, Springer International Publishing, ICME 13 Monograph, (2017), 243-267**
11. An analytic model for left invertible weighted translation semigroup (with Geetanjali Phatak), Acta Sci. Math.(Szeged), 85(2019), 295-311 (doi: 10.14232/actasm-018-546-3)
12. Hyperexpansive Weighted translation semigroups (with Geetanjali Phatak), Colloquium Mathematicum, Vol. 159(2) (2020), 157-169 DOI: 10.4064/cm7583-12-2018.
13. Weighted translation semigroups: Multivariable case (with Geetanjali Phatak ), Acta Sci. Math. (Szeged) 89(2023),35-52 (<https://doi.org/10.1007/s44146-023-00085-8>)

14. **Mathematical delights in Indian knowledge system, VEETHIKA, Vol 13 (1), September 2022, 199-207.**
15. Cyclic, analytic 2-isometry of finite rank and Cauchy dual subnormality problem, (with M. Khasnis), Preprint
16. Completely hyperexpansive operators of finite rank and de Branges-Rovnyak spaces, (with Saeed Joshi), Preprint

#### Articles

1. Mathematics and Nature, Chhatraprabodhana, November 2006(No.2)
2. On Alphametics in Chatraprabodhana, June 2006 (No.9)
3. On Linear Programming in Fast Track, 2008
4. On Interdisciplinarity in Kesari Maratha, 2008
5. Maitree Ganitashi, Chhatraprabodhana, July 2010 (No.10)
6. Mathematics, Beauty not Phobia, Chatraprabodhan, Diwali 2012
7. Madhava aani Kerala Ganit Parampara, Srushtivijnan 2012

#### Editorial Work

- Editor and coauthor of **Excursion in Mathematics (15th edition)**, a book written for the preparation of Regional and National Olympiad, Published by Bhaskaracharya Pratishthana, Pune
- **Member of the Text book writing committee for the schools of Maharashtra State Board, Published by Balbharati**

#### Books

Published 11 text books, with coauthors, according to the prevailing syllabi of different courses of Savitribai Phule Pune University and Higher Secondary Board.

#### MATHEMATICAL OLYMPIAD

- **National Coordinator (2013-2016)**
- **Regional Coordinator, Maharashtra and Goa Region (2001-2005)**
- **Resource Person at International Math Olympiad Training Camp(IMOTC)**
- **Coordinator, European Girls' Math Olympiad(2015-2018)**
- **Leader of the Indian team in the European Girls' Mathematical Olympiad held at Busteni, Romania,16-20 April, 2016.**
- **Deputy Leader of the Indian team in the 60th IMO held at Bath, UK 14th to 22nd July, 2019.**
- **Observer(B) in the International Mathematical Olympiad held at Cape Town, South Africa, July 2014.**
- **Problem Coordinator in the International Math Olympiad hosted by India in Mumbai, 1996.**

#### MADHAVA MATHEMATICS COMPETITION

- **Chief Coordinator of a national level competition for undergraduates in India (2010-)**
- **Resource Person in the Madhava Nurture Camps**

#### MTTS PROGRAMME

- **Resource Person at MTTS, Mini MTTS and MTTS Overture Camps**
- **Local Coordinator for the MTTS camp held at Pune in 2005**

#### ORGANIZATIONAL WORK

- **Founding Member and General Secretary, Mathematics Teachers' Association (2018-2021)**
- **Governing Body Member, Bhaskaracharya Pratishthana, Pune, India (2011-)**
- **Coordinator for the National Initiative in Math Education(NIME), Western Region (2012)**
- **Organized a state level conference on Teaching-Learning Processes in Higher Education (2007)**

TEACHERS' TRAINING PROGRAMMES	<ul style="list-style-type: none"> <li>Delivered lectures and organized ATM Schools for College and University Teachers, (funded by NBHM/NCM) in 2006, 2008, 2014, 2015, 2016, 2017, 2023</li> <li>Coordinator and Resource Person for Pedagogical Training for Mathematics Teachers (PTMT), April 2012</li> <li>Train the Trainers Programme: A national level training programme for school/college teachers who are interested in training Math Olympiad students. An activity carried out in the pandemic period-July 2021 to October 2021.</li> <li>Resource Person in 5 episodes of MS-Deed Programme (funded by MSFDA and organized by IISER, Pune): The programme aims at developing the professional capacities and skills of participants in various aspects of teaching-learning at the undergraduate level</li> </ul>
CURRICULUM DESIGN	<p>Contributed in the curriculum design and implementation in the following organizations:</p> <ul style="list-style-type: none"> <li>Member, Board of Studies in Mathematics, Savitribai Phule Pune University, India</li> <li>Member, Board of Studies in Mathematics, Symbiosis College (Autonomous), Pune, India</li> <li>Member, Board of Studies in Mathematics, Chaugule College (Autonomous), Goa, India</li> <li>Member, Board of Studies in Mathematics, K. J. Somaiya College of Science and Commerce Mumbai, India</li> <li>Member, Advisory Committee, Star College Scheme, St. Xavier's College, Mumbai</li> <li>Member, Research Committee, Bahai Academy, Panchgani, India</li> </ul>
NEP AND IKS	<ul style="list-style-type: none"> <li>Delivered a lecture on "Curriculum design and course credits under NEP". in a conference held at Sophia College, Mumbai (Feb 2023)</li> <li>Delivered a lecture on "Multidisciplinarity Curriculum design and course credits under NEP". in a conference held at S. P. College, Pune (Feb 2023)</li> <li>Delivered a lecture on NEP at IISER, Pune in MS-DEED Programme</li> <li>Delivered a lecture on 'Ancient Indian Mathematics' SPPU, July 2023</li> <li>Delivered 3 lectures on "Recursive Techniques in Kerala School of Mathematics" in a Faculty Development Programme held at SPPU, October, 2023.</li> <li>A public speech in Marathi on <i>Keraliya Ganiti Parampara</i> organized by Marathi Vijnan Parishad (Nov 2018). A booklet on the lecture published by the organization.</li> <li>Lecture on Ancient Indian Mathematics organized by Vijnana Bharati (Dec 2020)</li> </ul>
POPULARIZATION OF MATHEMATICS	<ul style="list-style-type: none"> <li><b>Mathematics for Everyone: A special lecture series in the online mode for in the public at large in the pandemic period. Conceptualized, coordinated the programme and delivered conducted 7 out of 15 sessions. A paper on the basis of this experiment has been accepted for presentation in the ICME-15 (July 2024).</b></li> <li>Several articles in local marathi newspapers, magazines and lectures in the non-specialists circles.</li> <li>Initiative and Leadership in organizing Math Exhibition at S. P. College for more than 30 years.</li> </ul>
E-CONTENT DEVELOPMENT	<ul style="list-style-type: none"> <li><b>Delivered a series of 48 Video lectures on Complex Analysis under MHRD project at Bhaskaracharya Pratishthana, Pune. The lectures are available in the electronic format.</b></li> <li><b>Running a Youtube Channel: Mathorich. See <a href="http://www.youtube.com/@mathorich6611">http://www.youtube.com/@mathorich6611</a></b></li> <li><b>10 videos on Topics in Operator Theory and 17 on other interesting topics. See a list of videos at <a href="https://www.vmsbolapurkar.com/videos">https://www.vmsbolapurkar.com/videos</a></b></li> </ul>
SPECIAL LECTURES	<ul style="list-style-type: none"> <li>Delivered an Invited Talk on Harmonic Analysis and Operator Theory in the Annual Conference of IMS, Jodhpur, 2006</li> <li>Delivered a lecture in the International Conference on recent Advances in Operator Theory and Operator Algebras (ISI Bangalore, December 2005)</li> <li>Delivered a Colloquium Talk on Godels Incompleteness Theorem at the annual meeting of the society for Industrial Mathematics (Pune, December 2005)</li> <li>Delivered a Colloquium Talk on Completely Hyperexpansive Operators at Indian Statistical Institute, Bangalore (June 2008)</li> <li>Delivered a Colloquium Talk on Integral Representations and Operator Theory I.I.T. (Kanpur) (No 2010)</li> </ul>

- Delivered A. R. Rao Memorial Lecture on History of Geometry, organized by Gujarat Ganit Mandal on 17th November, 2018.
- K. M. Agashe Memorial Lecture on Absolutely Continuous Functions, at Fergusson college, Pune
- Mangala Narlikar Memorial Lecture on Abel's Theorem on Quintic Polynomials at Bhaskaracharya Pratishthana, Pune (17th Jan, 2024)
- Public Lecture on 'Life and Work of Ramanujan' in Marathi organized by Vigyan Prasar as a part of Indira Language Series (August 2020)
- Lecture Series on Poincare Lemma and de Rham Cohomology, Parvatibai Chaugule College, Goa
- Theorem of the Month: Killing-Hopf Theorem at Birla College, Mumbai
- A special lecture in 'Forays' at IIT, Chennai, January, 2017
- A lecture in the series "Math Clinic" on 'Preparing Students for Math Competitions' (June 2021)
- Delivered a lecture in a workshop on Recent Advances in Operator Theory and Operator Algebras (Indian Statistical Institute, Bangalore 1998 )
- Delivered more than 25 special lectures on a variety of topics at different colleges in Maharashtra
- **Delivered special lectures under INSPIRE programme at many colleges in Maharashtra.**
- **Delivered an Invited Talk in the National Conference on Discrete Mathematics, Savitribai Phule Pune University, December 2012.**
- **Delivered a talk on NIME Western Regional Initiatives' in the National Conference at HBCSE, Mumbai organized as a part of National Initiative on Mathematics Education(January, 2012)**

INDIAN DELEGATIONS Part of the Indian contingent in the following events:

- International Congress of Mathematicians (ICM), held at Madrid, Spain (August 2006)
- International Congress of Mathematics Education held at Seoul, South Korea from July 7th to 15th , 2012.
- International Congress of Mathematics Education held at Hamburg, Germany from July 24th to 31st , 2016.
- Represented S. P. College as a member of the Indian delegation that visited Germany (2008 and 2010) and Sri Lanka (2009 and 2010) under Pasch - a collaborative programme with Goethe Institute, Germany

VISITING FACULTY Worked as a Visiting Faculty in the Following Institutions:

- CML Lab, TIFR Center, Pune
- IISER, Pune
- Bhaskaracharya Pratishthana, Pune
- Gokhale Institute of Economics and Political Science, Pune
- Department of Mathematics, Savitribai Phule Pune University
- Department of Computer Science, Savitribai Phule Pune University
- Ferguson College, Pune

SEMINARS/  
CONFERENCES

Participated and delivered lectures in more than 25 National/ International conferences. The prominent among them have been listed below:

- A talk at IIT, Indore on 9th August, 2018
- Lectures at CMI, IIT Bhubaneswar, St. Xavier Kolkata, St. Xavier Ahmedabad, etc. in Madhava Nurture Camps
- Presented a paper on Undergraduate Science Education in the National conference on Revamping of Science Education, organized by U. G. C. (December 2003)
- Presented a paper on Challenges before teachers in the state level conference on Quality Initiative in Higher Education ( S. P. College, Pune, September 2004)
- Attended a conference at the Institute for Advanced Studies at Princeton, U. S. A. October 2004
- Delivered a talk in the International Workshop on Operator Theory, I.I.Sc., Bangalore, December, 2013
- Presented a paper on Hyperexpansive Weighted Translation Semigroup in an International Workshop on Operator Theory and Operator Algebra (Poland, 2022)

RESEARCH GUIDANCE Completed Work:

- M. Phil. Thesis: Reflexivity of Operators (geetanjali Phatak)
- M. Phil. Thesis : Negative Definite Functions and Operator Theory (Shamal Deshmukh)
- Ph. D. Thesis : Weighted Translation Semigroups: One and Multivariable Cases (Geetanjali Phatak)

Work in Progress:

- Cauchy Dual Subnormality Problem ( Mnadar Khasnis)
- Model Theory on De Branges Rovnyak Spaces (Saeed Joshi)

ACADEMIC VISITS      U.S.A., U. K., Germany, Spain , Sri Lanka, South Korea, South Africa, Romania, Poland

- AWARDS
- First Prize (**Susanvad Prize**) for the best research work, Savitribai Phule Pune University, 1999
  - Best Teacher Award- Nityanand Bhavan Puraskar 5th September 2007
  - Teaching Award from Uttar Bharatiya Sangh on 22nd October 2007
  - Consistency Award from Bahai Academy, Panchgani, 3rd September, 2017
  - Best Innovative Teacher Award by CEDA, 12th July, 2018
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