



Rohit Khandelwal

Curriculum Vitae

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DOB: May 4, 1992

Work Experience

- August 2023 **George Mason University, VA, USA**, *Post Doctoral Research Fellow, Department of Mathematics and Artificial Intelligence.*
- June 2021 – **Government of Gujarat, India**, *Assistant Professor, Department of Mathematics.*
(On leave, from August 07, 2023)

Education

- 2022 **Indian Institute of Technology (IIT) Delhi, New Delhi, India**, *Doctor of Philosophy, Mathematics.*
Supervisor: Prof. Kamana Porwal
- Thesis title: Pointwise A Posteriori Error Analysis of Finite Element Methods for Elliptic Variational Inequalities.
- 2016 **Indian Institute of Technology (IIT) Madras, Chennai, India**, *Master of Science, Mathematics.*
CGPA: 7.88
- 2014 **University of Delhi, New Delhi, India**, *Bachelor of Science (Honours), Mathematics.*
Percentage: 72.00

Field of Interest

Finite Element Methods for Variational Inequalities

- Finite element methods
- Discontinuous Galerkin methods
- Adaptive Finite Element Method (AFEM)
- Maximum norm a posteriori error analysis
- Optimal control problems and Optimization

Publications

1. Rohit Khandelwal and Kamana Porwal. Pointwise a posteriori error analysis of a finite element method for the Signorini problem. *Journal of Scientific Computing*, 2022, 91(2):1–34 pp.
2. Rohit Khandelwal and Kamana Porwal. Pointwise a posteriori error analysis of quadratic finite element method for the elliptic obstacle problem. *Journal of Computational and Applied Mathematics*, 2022. DOI: doi.org/10.1016/j.cam.2022.114364.
3. Rohit Khandelwal and Kamana Porwal. Pointwise a posteriori error control of discontinuous Galerkin method for unilateral contact problems. *Computational Methods in Applied Mathematics*, 2023, 27(1):189–217 pp.
4. Rohit Khandelwal, Kamana Porwal and Ritesh Singla. Supremum-norm a posteriori error control of quadratic discontinuous Galerkin methods for the obstacle problem. *Computers and Mathematics with Applications*, 2023, 137:147–171 pp.
5. Rohit Khandelwal, Kamana Porwal and Tanvi Wadhawan. Adaptive Quadratic finite element method for unilateral contact problem. Accepted for publication in *Journal of Scientific Computing*.
6. Rohit Khandelwal, Kamana Porwal and Tanvi Wadhawan. Supremum norm A Posteriori Error control of Quadratic Finite Element Method for the Signorini problem (Submitted).
7. Rohit Khandelwal, Kamana Porwal and Tanvi Wadhawan. Pointwise A Posteriori Error control of Quadratic Discontinuous Galerkin Finite Element Method for the Signorini problem (To be submitted).

Teaching Assistant

- Finite Element Methods
- Computing Laboratory
- Numerical Analysis
- Calculus
- Linear Algebra and it's applications

Scholastic Achievements

- Awarded CSIR Senior Research Fellowship (SRF) for PhD.
- Passed National examination CSIR-UGC NET for Lectureship.
- Passed GATE Examination with All India Rank 34 (out of 8000) (2016).
- NBHM MA-MSc Scholarship (2015-16).
- IIT Madras Merit Cum scholarship.
- Secured All India Rank 140 (out of 15000) in IIT JAM examination (2014) for Post Graduation study in IIT's.

Workshop

- Attended "Finite elements for Non-Linear and Multi scale problems". (Feb 28 - March 3, 2020). Indian Institute of Science, Bengaluru.
- Attended "ATM IST PDE : Theory and Computation". (July 23 - August 4, 2018). Indian Institute of Science, Bengaluru.
- Attended "National Workshop on Nonlinear Functional Analysis and Its Applications". (February 19-24, 2018). Graphic Era (Deemed to be University), Dehradun.
- Attended "Indo-German Workshop On "Optimal control, Inverse problems and their applications". (February 7-9, 2018). Indian Institute of Technology, Delhi.
- Attended GIAN Course "Isogeometric methods using B splines and nurbs". (December 16-20, 2017). Indian Institute of Technology, Varanasi.
- Attended GIAN Course "Computational Solutions of Hyperbolic PDEs for Scientists, Engineers and Mathematicians". (December 4-16, 2017). Indian Institute of Technology, Delhi.

References

1. Prof. Kamana Porwal (PhD Supervisor)
Assistant Professor, Department of Mathematics
IIT Delhi, New Delhi, Delhi, India.
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2. Prof. Thirupathi Gudi
Professor, Department of Mathematics
Indian Institute of Science, Bangalore, India.
Email: mathgudi@gmail.com
3. Prof. Mani Mehra
Professor, Department of Mathematics
IIT Delhi, New Delhi, Delhi, India.
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