NAUMAN RAZA
CURRICULUM VITAE

Assistant Professor
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EDUCATION

INSTITUTION	DEGREE	DATE
University of the Punjab	Ph.D.	July, 2009
Government College University	M.Sc.(Telecommunications)	Sep., 2004
University of Engg. & Technology	M.Sc.(Mathematics)	Sep., 2002

TITLE OF DOCTORAL THESIS: Numerical Methods for simulation of propagation of Electromagnetic fields in fiber optics

PROFESSIONAL EXPERIENCE

ACADEMIC POSITIONS

October 2012-till	Assistant Professor of Mathematics at Punjab University Lahore
2011-2012	Assistant Professor of Mathematics at U.E.T. Lahore
2010-2011	Assistant Professor of Mathematics at U.M.T. Lahore
2008-2010	Assistant Professor of Mathematics at GCU, Faisalabad

FIELDS OF INTEREST

1. Numerical solution of ODEs and PDEs
2. Scientific Computing
3. Computational Fluid dynamics
4. Numerical Optimization

HONOURS & AWARDS

1. Scholarship for Post-Doctoral Fellowship at McMaster University
2. Indigenous Scholarship for Ph.D.
3. Research Productivity award by PCST 2011
4. Research Productivity award by PCST 2012

PROFESSIONAL SERVICES

1. Managing Secretary, Punjab University Journal of Mathematics, Lahore, Pakistan from April 2014 to October 2015
2. Student Advisor from October 2015-till
3. Member, Board of Studies of Mathematics, Punjab University, Lahore
4. Member, Departmental development committee (DDC), Punjab University, Lahore
5. Member, Institutional Scholarships Award Committee University of the Punjab, Lahore
6. Incharge B.S. building of Mathematics Department, Punjab University, Lahore

PUBLICATIONS

Book

1. (with Sultan Sial) Sobolev gradient Methods, Lambert Academic Publishing., ISBN-NR, 978-8383-8501-3, (2010), Lambert academic Publishing, Germany.

Publications in Refereed Journals

1. Raza, N., Javaid, A., Sial S., and Ahmad, M.D. Polynomial Solutions of Singular Differential equations using Sobolev gradients, Preprint Submitted to Elsevier, (2015)

2. Zubair, S., Raza, N., Approximate Solution of SIR model using Differential Transform method, Preprint Submitted to Elsevier

3. Raza, N., Javaid, A., and Butt, A.R. Approximate solution of Klein-Gordon equation using Sobolev gradients in Finite element settings, Preprint Submitted to Hindawi

4. Sial, S., Raza, N., Khan, A., and Naeem, I., Notes on Numerical gradient for control theory problems, Preprint Submitted to Elsevier

5. Raza, N., Butt, A.R. and Javaid, A. Numerical solution of Klein-Gordon equation using Sobolev gradients, Accepted, Journal of Function Spaces, ID 542897, 7 pages, (2016), **ISI, Impact factor: 0.56**

6. Raza, N., Sial, S., and Butt, A.R. Numerical approximation of time evolution related to Ginzburg-Landau functionals using weighted Sobolev gradients, Computer and Mathematics with Applications, 67, 210-216, (2014), **ISI, Impact factor: 1.996**

7. Raza, N., Sial, S., and Butt, A.R. Numerical solutions of singularly perturbed reaction diffusion equation with Sobolev gradients, Journal of Function spaces and Applications, ID 542897, 6 pages, (2013), **ISI, Impact factor: 0.5**

8. Raza, N., Sial, S. Sobolev gradient approach for Huxley & Fisher models for Gene Propagation, Applied Mathematics, 4, 1212-1219, (2013)

9. Raza, N., Sial S. and Neuberger, J.W. Numerical solution of Burgers' equation by the Sobolev gradient method, Applied Mathematics and Computation, 218, 4017-4024, (2011), **ISI, Impact factor: 1.124**

10. Raza, N., Sial, S. and Siddiqi, S. Approximating time evolution related Ginzberg-Landau functionals via Sobolev gradient methods in a finite-element setting, Journal of Computational Physics., 229, 1621-1625, (2010), **ISI, Impact factor: 2.384**

11. Raza, N., Sial, S. and Siddiqi, S. Sobolev gradient approach for the time evolution related to energy minimization related to Ginzberg-Landau functionals, Journal of Computational Physics., 228, 2566-2571, (2009), **ISI, Impact factor: 2.384**

12. Raza, N., Sial, S., Siddiqi, S. and Lookman, T. Energy minimization related to Nonlinear Schrodinger equation, Journal of Computational Physics., 228, 2572-2577, (2009), **ISI, Impact factor: 2.384**

13. Raza, N., Sial, S. and Siddiqi, S. Simulation study of Propagation of pulses in Optical fiber Communication Systems using Sobolev gradient and Split-Step Fourier Methods., Intarnational journal of Computational methods., 6, 1-12, (2009), **ISI**, **Impact factor: 0.89**

14. Raza, N., Sial, S. and Neuberger, J.W. Numerical solutions of integro-differential equations using Sobolev gradient method, International journal of Computational methods., 6, 1-12, (2009), **ISI, Impact factor: 0.89**

Conference Proceedings

1. Raza, N. and Sial, S. Sobolev gradient approach for Fisher and Huxley models for Gene Propagation, Summer conference in Mathematics-2010. Organized by Center of Advanced Studies in Mathematics (CASM), LUMS, July 26-27, (2010)

2. Raza, N., Sial, S. and Siddiqi, S. Sobolev gradient approach to find soliton solutions from the nonlinear shcrodinger equation in finite-element setting, World conference of Mathematics. Organized by Abdus-Salam School of Mathematical sciences (ASSMS), March 4-8, (2009)

3. Raza, N. and Sial, S. Numerical methods for simulation of Propagation of pulses in fiber optics

communication systems, Conference on recent advances in Mathematical methods models and applications organized by CASM, LUMS, April 18-19, (2009)

Invited Talks

1. Application of Shape Derivatives and Topology Optimization to Vortices, Symposium organized by Lahore University of Management and Sciences (LUMS), June 27, 2014.

2. Applications of differentiation and Integration, Workshop organized under IEEE, Telecommunication Engineering Department, Government College University Faisalabad, 2007.

3. Numerically finding equilibrium states of Landau-Ginsberg Systems, Mathematics Department, University of the Punjab, Lahore 2006.

4. From u'=u to superconductor vortices, Mathematics Department, University of the Punjab, Lahore 2008.

TEACHING EXPERIENCE

Undergraduate level Courses

1. Applied Calculus
2. Probability and Statistics
3. Ordinary Differential Equations
4. Linear Algebra
5. Numerical Analysis
6. Complex Transforms
7. Complex Analysis

Graduate level Courses

1. Fluid Mechanic
2. Numerical Analysis
3. ODEs and Computational Linear Algebra
4. Analytical solution of Partial Differential equations
5. Mathematical Statistics

RESEARCH EXPERIENCE

1. Finding computational solution of some classes of free boundary problems arising in fluid mechanics. In such problems the shape of the domain where the governing PDEs are stated is unknown and determined as a part of the solution of the problem.

2. Designing new algorithms on the base of Sobolev gradient methods which quickly do simulation.

3. Four years research experience using Sobolev gradient methods to minimize energy functional related to Ginzburg-Landau functional and finding soliton solution from the Nonlinear Schrodinger equation.

Supervision of Ph.D./M.Phil Thesis

Ph.D. students in Progress

1. Anila Razzaq
2. Usman Afzal

Supervision of M.Phil Thesis

1. Polynomial Solution of Singular Differential Equations using Weighted Sobolev Gradients by **Ahmad Javid**, 2015

M.Phil student in Progress

1. Asad Zubair

CONFERENCE/WORKSHOP PARTICIPATION

1. Summer School on high performance Computing organized by SciNet, Toronto, Canada, May 7-10, (2013)

2. Summer Conference in Mathematics-2010. Organized by Centre for Advanced Studies in Mathematics (CASM), LUMS, Lahore, July 26-27, (2010)

3. Conference on Recent Advances in Mathematical Methods, Models & Applications-2009. Organized by Centre for Advanced Studies in Mathematics (CASM), LUMS, Lahore, April 18-19, (2009)

4. 4th World Conference on 21st century Mathematics 2009. Organized by School of Mathematical Sciences (SMS) GC University Lahore, Pakistan, March 4-8, (2009)

5. Winter Conference in Mathematics-2008. Organized by Centre for Advanced Studies in Mathematics (CASM), LUMS, Lahore, December 20-21, (2008)

6. Summer Conference in Mathematics-2008. Organized by Centre for Advanced Studies in Mathematics (CASM), LUMS, Lahore, July 28-29, (2008)

7. Conference on Recent Advances in Mathematical Methods, Models & Applications-2008. Organized by Centre for Advanced Studies in Mathematics (CASM), LUMS, Lahore, April 26-27, (2008)

8. LUMS 2nd 9-12, (International Conference on Mathematics & its Applications in Information Technology. Organized by LUMS in colaboration with SMS, Lahore, Pakistan, March , (2008)

9. Summer Conference in Mathematics-2007. Organized by Centre for Advanced Studies in Mathematics (CASM), LUMS, Lahore, July 30-31, (2007)

10. Conference on Recent Advances in Mathematical Methods, Models & Applications-2007. Organized by Centre for Advanced Studies in Mathematics (CASM), LUMS, Lahore, April 28-29, (2007)

11. 3rd International Conference on 21st century Mathematics. Organized by School of Mathematical Sciences (SMS) GC University Lahore, Pakistan, March 4-7, (2007)

12. Winter Conference in Mathematics-2006. Organized by Centre for Advanced Studies in Mathematics (CASM), LUMS, Lahore, December 1-2, (2006)

13. International Symposium on Relativity. Organized by Department of Mathematics University of the Punjab, Lahore, 6th april (2006)

14. 2nd World Conference on 21st century Mathematics 2005. Organized by School of Mathematical Sciences (SMS) GC University Lahore, Pakistan, March 4-6, (2005)

TEACHING AREAS

1. Applied Mathematics
2. Computational Mathematics
3. High Performance Computing

LANGUAGES

1. English (fluent)
2. Urdu (fluent)
3. Punjabi (fluent)

ORGANIZATIONAL AFFILIATIONS

1. Member of American Mathematical Society
2. Member of Punjab Mathematical Society
3. Member of Amnesty International

REFERENCES

1.

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2.

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3.

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