Curriculum Vitae
Bhupen Deka

Personal Information

Full Name	Bhupen Deka
Father's Name	Nripen Deka
Mother's Name	Kunja Deka
Marital Status	Married
Date of Birth	31^{st} August, 1978
Citizenship	Indian
Home Address	Vill.-Madanpur, P.O.-Deuduar, Kamrup, Assam−781101
Office Address	Department of Mathematical Sciences, Tezpur University, Napamm Tezpur−784 028
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Education

- **PhD, Mathematics**, April 2006.
  Indian Institute of Technology Guwahati, Assam, India
  PhD Thesis: Finite Element Methods for Elliptic and Parabolic Interface Problems
  Advisor: Dr. Rajen K. Sinha
- **MSc, Mathematics**, August 2001.
  Indian Institute of Technology Delhi, Delhi, India
  Cumulative GPA: 7.04 (Scale of 10.00)
  MSc Thesis: Boundary Value Problems Associated with Trigonometric-Like Functions.
  Advisor: Dr. T. Gnana Bhaskar
- **BSc (Honors), Mathematics**, September 1999.
  Cotton College, Guwahati, Assam, India,
  Percentile Marks: 74.4

Professional Experience

Teaching Assistant – Indian Institute of Technology Guwahati, Assam, India — Aug 2002–May 2004

MA 101 under Dr. Rajen K. Sinha [Fall 2002]
MA 201 under Dr. Arindam Sengupta [Fall 2002]
MA 102 under Dr. Swaroop Nandan Bora [Fall 2003]
MA 101 under Dr. M. P. Rajan [Fall 2004]
Role / Duties: Lab Instructor, Assignment Evaluation

Associate Professor– Tezpur University, Napaam, India — 13th of August 2010– Present

Assistant Professor– Tezpur University, Napaam, India — 10th of Jan 2008– 13th of August 2010

Assistant Professor– Assam University, Silchar, India — 1st of January 2006– 8th of Jan 2008

Lecturer– Assam University, Silchar, India — 4th of Oct 2005– 31st of Dec 2005

Course instructor for M. Sc. level courses such as *Computer Programming with C*, *Ordinary Differential Equation*, *Mathematical Theory to Finite Element Method*, *Partial Differential Equation*, *Real Analysis*, *Numerical Solution of ODE*, *Mathematical Software*, *Mathematical Methods*, *Numerical Analysis*, *Functional Analysis*

Course instructor for undergraduate level courses such as *Mathematics I*, *Mathematics II*, *Mathematical Methods & PDE*, *Integral Equations & Transforms*

Course instructor for B. Tech level courses such as *Mathematics IV*, *Mathematics I*, *Mathematics II*,

Research Interests

- Numerical Analysis
- Finite Element Methods
- Interface Problems
- Numerical Solutions to Integro Differential Equations

Relevant Coursework

- Postgraduate credits at Indian Institute of Technology Delhi, Delhi, India
  - Real Analysis
  - Linear Algebra
  - Ordinary Differential Equations
  - Partial Differential Equations
  - Methods of Applied Mathematics
  - Numerical Analysis
  - Functional Analysis
  - Computing and Programming

Basic Computer Science

Computer Programming and its Application

Computer-Oriented Operation Research

- PhD credits at Indian Institute of Technology Guwahati, Assam, India

  Applied Functional Analysis

  Numerical Analysis

  Numerical Solution to Partial Differential Equation

  Theory of Distribution and Sobolev spaces

  Finite Element Methods

Skill Set

- **Programming Languages & Miscellaneous Tools:**
  - Fortran77, C, C++
  - MATLAB
  - LaTeX, Microsoft Office
- **Operating System Environments:**
  - Linux, Dos, Windows
- **Language Skill:**
  - Assamese, Hindi, English

Papers / Publications

- *Finite Element Method with Quadrature for Parabolic Interface Problems,* Accepted in **Neural, Parallel and Scientific Computations**, with R. K. Sinha, R. C. Deka and T. Ahmed.
- *Finite element methods with numerical quadrature for linear parabolic interface problems,* Accepted in **Bull. Korean Math. Soc.**, with R. C. Deka.
- *Finite Element Method for a class of Parabolic Integro-Differential Equations with Interfaces,* Accepted in **Ind. J. Pure. and Appl. Math.,** with R. C. Deka.
- *Zeros of Ttrigonometric Like Functions via Two Point Boundary Value Problems,* Accepted in **Mathematical Forum,** with S. Deka.
- *Convergence of Finite Element Method for Linear Second order Wave Equations with Discontinuous Coefficients,* **Numer. Method for PDE, 29(2013), pp. 1522-1542,** with T. Ahmed.
- *Finite element methods for second order linear hyperbolic interface problems,* **Applied Mathematics and Computation, 218(2012), 10922-10933**, with R. K. Sinha.
- *Semidiscrete Finite Element Methods for Linear and Semilinear Parabolic Problems with Smooth Interfaces: Some new Optimal Error Estimates,* **Numer. Funct. Anal. Optim.** 33, 2012, pp. 524-544, with T. Ahmed.
- *Finite element methods for semilinear elliptic problems with smooth interfaces,* **Ind. J. Pure. Appl. Math.** 42, 2011, pp. 205-223, with T. Ahmed.
- *$L^\infty(L^2)$ and $L^\infty(H^1)$ norms Error Estimates in Finite Element Method for Linear Parabolic Interface Problems*, **Numer. Funct. Anal. Optim., 32, 2011, pp.267-285,** with R. K. Sinha.
- *Finite Element Methods with Numerical Quadrature For Elliptic Problems with Smooth Interfaces,* **Journal of Computational and Applied Mathematics,** 234(2010), pp. 605-612.

- *Finite element methods for semilinear elliptic and parabolic interface problems,* **Applied Numerical Mathematics, 59(2009), pp. 1870-1883,** with R. K. Sinha.
- *An unfitted finite element method for elliptic and time dependent parabolic interface problems,* **IMA J. Numer. Anal., 27(2007), pp. 529-549** with R. K. Sinha.
- *A priori error estimates in finite element method for non selfadjoint elliptic and parabolic interface problems,* **Calcolo, 43 (2006), pp. 253 278**, with R. K. Sinha.
- *On the convergence of finite element method for second order elliptic interface problem,* **Numer. Funct. Anal. Optim., 27 (2006), pp. 99-115,** with R. K. Sinha.
- *Optimal error estimates for linear parabolic problems with discontinuous coefficients,* **SIAM J. Numer. Anal., 43 (2005), pp. 733-749**, with R. K. Sinha.

Papers / Submitted/Under Preparation

- *Finite Element Galerkin Approximation for Parabolic Integro-Differential Equations with Discontinuous Coefficients: Error Analysis,* Submitted, with R. C. Deka.

Papers /Conference

- *Finite Element Methods for Semilinear Parabolic Interface Problems,* **Proc. Appl. Math. Mech., 7 (2007 DOI.10.1002/ Pamm. 200700162), ICIAM 07** with R. K. Sinha.

Presentation/ Talk

- Invited speaker for the symposium on **Numerical solutions of PDE** in the **2013 Annual Meeting of the RMS at the Rewa Institute in Bangalore during June 27 -30**.
- Invited speaker in the International Conference on Mathematical Modeling and Applications to Industrial Problems, NIT Calicut, March 28-31, 2011
- *Finite element methods for elliptic interface problems,* Given a talk at Department of Mathematics Seminar Series, March 2005, Indian Institute of Technology Guwahati, India
- *Convergence of finite element method for second order elliptic interface problems,* **Presented in** *First Indo-German conference in PDE, Scientific Computing and Optimization,* September 8−11, 2004, University of Trier, Germany.
- *Studies of zeros of Trigonometric like functions via two point boundary value problems,* **Presented in** *Joint 9th National Conference of the Vigyan Parishad of India on Applied and Industrial Mathematics and 5th Annual conference of Indian Society of Information Theory and Application,* February 22−24, 2002, Netaji Subhas Institute of Technology, New Delhi, India.
- *Boundary value problem associated with trigonometric-like functions,* Given a talk at Department of Mathematics Seminar Series, 2001, Indian Institute of Technology Guwahati, India

Resource Person

- Invited speaker for the symposium on **Numerical solutions of PDE** in the **2013 Annual Meeting of the RMS at the Rewa Institute in Bangalore during June 27 -30**.
- Resource Person for the **Under Graduate Level Workshop on Analysis, Algebra and its Application** held at Department of Mathematical Sciences, Tezpur University during February 28 to March 3, 2013, Jointly organized by ISI Kolkatta and Tezpur University.
- Resource Person for the **UGC Sponsored Refresher Course on Mathematics during 22th of March to 11th of April, 2012, NEHU**

- Resource Person for the **Regional Workshop on Mathematical Laboratory during 09-10 December, 2009, Dibrugsrh University**
- Resource Person for **UGC Sponsored Workshop on Computational Technique during January 28-30, 2010, Womens College, Tinsukia**
- Delivered series of lectures in the Department of Statistics, Dibrugarh University on the topic "Numerical Computation using Matlab", 21st of March to 25th of March 2011, Under DST FIST.
- Invited speaker in the International Conference on Mathematical Modeling and Applications to Industrial Problems, NIT Calicut, March 28-31, 2011

National/ International Conference attended

- Participated in the one week workshop on 'ANALYSIS' held at Department of Mathematical Sciences, Tezpur University during January 3 to January 9, 2012, Jointly organized by ISI Kolkatta and Tezpur University.
- International Congress on Industrial and Applied Mathematics (ICIAM), 18th July to 22nd July 2011, Vancouver, British Columbia, Canada.
- International Workshop on Recent Advances in Computational Fluid Dynamics (A Satellite Event of ICM 2010), 30 th August to 2n d September 2010, Department of Mathematics, IIT Guwahati
- *Science Conclave: A Congregation of Nobel Prize Winners,* December 15−21, 2008, Indian Institute of Information Technology, Allahabad, India
- *Workshop on "Mathematical Programming and Related topics on Optimization-Methods, Application and Practices",* November 12−14, 2007, Organized Jointly by Indian Statistical Institute, Kolkata and Department of Statistics, Dibrugarh University, Assam, India
- *First Indo-German conference in PDE, Scientific Computing and Optimization,* September 8−11, 2004, University of Trier, Germany
- *Joint 9th National Conference of the Vigyan Parishad of India on Applied and Industrial Mathematics and 5th Annual conference of Indian Society of Information Theory and Application,* February 22−24, 2002, Netaji Subhas Institute of Technology, New Delhi, India.

Scientific Service

- Reviewer for **Journal of Computational and Applied Mathematics**
- Reviewer for **Numerical Functional Analysis and Optimization**

PhD Students

- Ramcharan Deka, Enrolled in July 2008.

  Topic: Quadrature Finite Element Method
- Tazzudin Ahmed, Enrolled in July 2008.

  Topic: Finite Element Methods for Interface Problems, **PhD awarded**

Major Additional Responsibilities

- Vice Chairman, **Tezpur University Entrance Examination for two consecutive terms (2011 & 2012)**
- Organizing secretary for the workshop 'ANALYSIS' held at Department of Mathematical Sciences, Tezpur University during January 3 to January 9, 2012, Jointly organized by ISI Kolkatta and Tezpur University

- Department coordinate for Reassessment of NAAC Accreditation in 2013

Achievements

- **Junior Research Fellowship (JRF)/ National Eligibility Test for Lectureship (NET) awarded by Council for Scientific and Industrial Research (C.S.I.R)**, India, in April 2003
- **GATE** qualified with Percentile score 96.71 in Mathematics.
- Recipient of the Institute Merit-cum-Means scholarship at Indian Institute of Technology Delhi, Delhi, India
- Ranked 2^{nd} in the BSc Examination '99 conducted by Guwahati University, India

References

Prof. Rajen Kumar Sinha
Professor,
Department of Mathematics,
Indian Institute of Technology Guwahati,
Guwahati- 781039, Assam ,India,
Email: *rajen@iitg.ernet.in*

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