

## Curriculum Vitae

### Official Details:

**Name: Dr. MOUSUMI KUMAR**

Assistant Professor, Department of Mathematics

Aghorekamini Prakashchandra Mahavidyalaya, Bengai, Subhasnagar, Hooghly

Pin-712611, West Bengal

Ph. # 8902246911, E-Mail: [mousumi886@gmail.com](mailto:mousumi886@gmail.com)/ [mousumi886@yahoo.com](mailto:mousumi886@yahoo.com)

### Education:

- **Madhyamik** (1991) : WBBSE (1<sup>st</sup> Div.)
- **Higher Secondary** (1993) : WBCHESE (1<sup>st</sup> Div.)
- **B.Sc** (1996) Mathematics : Burdwan University (1<sup>st</sup> Class) Honours
- **M.Sc** (1998) Mathematics : Burdwan University (1<sup>st</sup> Class) (Real Analysis Special),
- **Awarded (2000)** : UGC-CSIR NET (JRF+LS)
- **Ph.D** (2014) Mathematical Sciences : Kalyani University

**Topic: Multiobjective Decision Making Methods and Application with Data Uncertainty in Decision Environment**

**Name of Ph. D. Supervisor: Prof. Bijay Baran Pal**

Professor, Department of Mathematics, University of Kalyani

### Teaching Experience: 12 Yrs

- ❖ Assistant Professor, Department of Mathematics, Aghorekamini Prakashchandra Mahavidyalaya, Bengai, Hooghly- 712611 (April 1, 2015 – Continuing)
- ❖ Assistant Professor, Department of Mathematics, Alipurduar College, Alipurduar-736122 (August 2, 2005 – March 31, 2015)

**Research Experience:** About 10 Yrs Research Experience in the area of Operation Research, Inexact Programming (Fuzzy Programming, Interval Programming and Stochastic Programming), Soft Computing & Pervasive Computing.

## Research Project:

- ✓ **Completed:** One Minor Research Project

**Title:** “A Priority Based Fuzzy Goal Programming Approach of Balance Application of Fertilizer Inputs for Winter Paddy in West Bengal, India”

**UGC Reference No.:** F.PSW-074/11-12 (ERO), S. No.: 205912, Amounting Rs. 1,90,000/-

**Period:** 11.02.2012-10.02.2014

- ✓ **Ongoing :** One Minor Research Project

**Title:** “Determining Optimum Land Use Planning in Agriculture System through Penalty Functions based Fuzzy Goal Programming Approach via Genetic Algorithm”

**Sanctioned by:** UGC, Amounting Rs. 2,70,000/-

**Period:** 03.10.2016-02.10.2018

## Rendered service

Rendered service as Reviewer of different International Journals Including Inder Science, Springer, Elsevier Science etc.

## Involvement with Academic Bodies

- ✚ Member of IEEE Advance Technology for Humanity, and IEEE Computational and Intelligent Society (IEEE-CIS), Membership No. 92654225
- ✚ Tripura Mathematical Society (No. 316/2009)
- ✚ Indian Society of Mathematics and Mathematical Sciences (Regn. No. 1006)
- ✚ International Journal of Advanced Computer Research: Association of Computer Communication and Education for National Triumph Society (ACCENTS) (Regn. NO. 2292911)

## List of Publication

### Chapter/ Monographs: 7

1. **M. Kumar**, V.E. Balas and B.B. Pal, (2016) Using Fuzzy Goal Programming with Penalty Functions for Solving EEPGD Problem via Genetic Algorithm, J.K. Mandal et al. (eds.) **Handbook of Research on Natural Computing for Optimization Problems**, IGI Global (USA), pp.847-869, **Chapter 34**  
DOI: 10.4018/978-1-5225-0058-2.ch034. ISBN13: 9781522500582
2. B.B. Pal, S. Roy and **M. Kumar** (2016) A Genetic Algorithm to Goal Programming Model for Crop Production with Interval Data Uncertainty, J.K. Mandal et al. (eds.) Handbook of

- Research on Natural Computing for Optimization Problems, **IGI Global** (USA), pp.30-65, **Chapter 2**  
DOI: 10.4018/978-1-5225-0058-2. ISBN13: 9781522500582
3. **M. Kumar** and B.B. Pal, (2015) A Linear Goal Programming Method for Solving Chance Constrained Multiobjective Problems with Interval Data Uncertainty, M.K. Chakraborty et al. (eds.), Facets of Uncertainties and Applications in Mathematics & Statistics, Springer, **Facets of Uncertainties and Applications, Lecture Notes in Computer application, Springer**. 125, pp. 325-343. **Chapter 25**  
DOI 10.1007/978-81-322-2301-6\_25, ISBN 978-81-322-2300-9
  4. B.B. Pal and **M. Kumar**, (2015) “A Hierarchical Optimization Method to solve Environmental-Economic Power Generation and Dispatch Problem with Fuzzy Data Uncertainty”, **Advances in Intelligent Systems and Computing, Springer**. 339, No. 1, pp. 419-434., **Chapter 42**  
**DOI:** 10.1007/978-81-322-2250-7\_ch042, **ISSN:** 2194-5357
  5. **M. Kumar** and B.B. Pal, (2014), FGP Model for Emission- Economic Power Dispatch, Wang (eds.) **Encyclopedia of Business Analytics and Optimization. IGI Global** (USA), **Chapter 87**.  
**DOI:** 10.4018/978-1-4666-5202-6. **ISBN:** 978-1-4666-5202-6.
  6. **M. Kumar**, S. Sen and B.B. Pal. (2014) “An Iterative Fuzzy Goal Programming Method to Solve Fuzzified Multiobjective Fractional Programming Problems”, Advances in Intelligent Systems and Computing, **Springer**, Volume 248, 2014, pp 219-231. **Chapter 25**  
**DOI:** 10.1007/978-3-319-03107-1\_ch025 **ISSN:** 2194-5357,
  7. B.B. Pal and **M. Kumar**, (2014) “Extended Goal Programming Approach with Interval Data Uncertainty for Resource Allocation in Farm Planning: A Case Study”, Advances in Intelligent Systems and Computing , **Springer**, Volume 248, 2014, pp 639-651, **Chapter 70**  
DOI: 10.1007/978-3-319-03107-1\_ch070, **ISSN:** 2194-5357

### **Journal/Proceeding Publication: 16**

8. B.B. Pal and **M. Kumar**, (2013), A Revised Multi-choice Goal Programming Framework for Economic-Environmental Power Generation and Dispatch Problem, Procedia Technology, **Elsevier**, Vol. 10, pp.637-645.  
DOI: 10.1016/j.protecy.2013.12.405.
9. B.B. Pal and **M. Kumar**, (2013) “A Fuzzy Goal Programming Procedure for Multiobjective Decision Making Problems Using Penalty Functions”, **IEEE Xplore. pp. 1-8**.  
DOI: 10.1109/FUZZ-IEEE.2013.6622445, **Print ISBN:** 978-1-4799-0020-6,
10. **M. Kumar** and B.B. Pal, (2013) “Interval Goal Programming for Economic -Environmental Power Generation - Dispatch Problems”, **IEEE Xplore. pp. 1-8. ISSN.** 1098-7584, **Print DOI:** 10.1109/FUZZ-IEEE.2013.6622446, **ISBN:** 978-1-4799-0020-6,

11. **M. Kumar** and B.B. Pal, (2013) “Fuzzy Goal Programming Approach to Chance Constrained Multilevel Programming Problems,” *International Journal of Advanced Computer Research (IJACR)*, Vol. 3, No. 1, pp. 193-200.  
ISSN No. (print): 2249-7277.
12. B.B. Pal and **M. Kumar**, (2013) “A Linear Fuzzy Goal Programming Method for Solving Optimal Power Generation and Dispatch Problem”, *International Journal of Advanced Computer Research (IJACR)*, Vol. 3, No. 1. pp. 56-64, 2013.  
ISSN No. (print): 2249-7277.
13. B.B. Pal, **M. Kumar**, S. Sen, (2012) “A Priority-based Goal Programming Method for solving Academic Personnel Planning Problems with Interval-valued Resource Goals in University Management System,” *International Journal of Advance Mathematics International Journal of Applied Management Science (IJAMS, Inderscience): Spl. Issue on: New Combinatorial Optimization Models for Decision Making*, Vol. 4, No. 3, PP. 284 – 312, 2012, **Indexed in Elsevier Science- Direct**.  
DOI: 10.1504/IJAMS.2012.047677, ISSN No.: 1755-8913.
14. **M. Kumar** and B.B. Pal, (2012) Dinkelbach Approach for Solving Interval-valued Multiobjective Fractional Programming Problems using Goal Programming, *International Journal of Computer Applications (IJCA)*, Vol. 57, No.8, pp. 12-17.  
DOI: 10.5120/9133-3321, ISSN No.: 0975-8887.
15. B.B. Pal, **M. Kumar** and S. Sen, (2011) Priority Based Fuzzy Goal Programming Approach for Fractional Multilevel Programming Problems” *International Review of Fuzzy Mathematics, (IRFM)*, vol. 6, Nos. 1-2, pp.1-14, 2011.  
ISSN No.: 0973-4392.
16. B.B. Pal, **M. Kumar** and S. Sen, “A Linear Fuzzy Goal Programming Approach for solving patrol manpower deployment planning problems – A case study”, *IEEE Xplore*, pp. 244-249, 2009.  
DOI: 978-1-4244-4837-1/09.
17. B.B. Pal, S. Sen and **M. Kumar**, “A Fuzzy Goal Programming Approach for Solving multiobjective fuzzy stochastic programming problems” *IEEE Xplore*, pp. 239-243, 2009.  
DOI: 978-1-4244-4837-1/09.
18. B.B. Pal, S. Sen and **M. Kumar**, “A Linear Approximation Approach to Chance Constrained Multiobjective Decision Making Problems”, *IEEE Xplore*, pp. 70-75, 2009.  
DOI: 978-1-4244-4786-9/09.
19. B.B. Pal, **M. Kumar** , S. Sen , “A Priority Based Interval-Valued Goal Programming Approach for Land Utilization Planning in Agricultural System: A Case Study”, *IEEE Xplore*, pp. 1-9, 2010.  
DOI: 978-1-4244-6589-7/10.
20. B.B. Pal, S. Sen and **M. Kumar**, “A Linear Fuzzy Goal Programming Method for Solving Fractional Bilevel Programming Problems ” *Rough Set, Fuzzy Set and Soft Computing*, 5-7 **Serials Publications**, pp.476-488

ISBN: 978-81-8387-417-5

21. B.B. Pal and **M. Kumar**, “An Interval-Valued Iterative Goal Programming Approach for solving Multiobjective Fractional Programming Problems,” *Indian Society of Mathematics and Mathematical Sciences*, Vol.6, pp.1-15, 2011

ISSN No.: 2231-2838.

22. B.B. Pal, S. Gupta. **M. Kumar**, “ A Stochastic Simulation Based Genetic Algorithm for Solving Chans Constrained Fuzzy Goal Programming Problems”. *Rough Set, Fuzzy Set and Soft Computing*, **Serials Publications**, pp.462-475.

ISBN: 978-81-8387-417-5

23. B.B. Pal, S. Sen and **M. Kumar**, “An Interval-Valued Goal Programming Approach to Stochastic Multiobjective Decision Making Problems”, *Operations and Management Sciences*, **Excel India Publishers**, pp. 415-423.

ISBN: 978-93-80043-79-1

### **Conference/ Seminar Attended (2009-2016):**

#### **International: 13**

#### **National 3**

**MTSBS-2015** (*International conference on Modern rands in Social and Basic Sciences*)  
(International)

#### **Paper Presented:**

Fuzzy Goal Programming Method for solving Quadratic Bilevel Programming Problems.

Organized by: Alipurduar College, Alipurduar, India, March 27-28, 2015

**INDIA-2015** (*INformation systems Design and Intelligent Applications*) (International)

#### **Paper Presented:**

A Hierarchical Optimization Method to solve Environmental-Economic Power Generation and Dispatch Problem with Fuzzy Data Uncertainty.

Organized by: Kalyani University, IEEE, Springer Sponsored, January 8-9, 2015

**ICFUA-2013** (*International Conference On Facets Of Uncertainties And Applications*)  
(International)

#### **Paper Presented:**

A Linear Goal Programming Method for Solving Chance Constrained Multiobjective Problems with Interval Data Uncertainty.

Organized by: Operation Research Society of India, December 5-7, 2013

**CIMTA-2013** (*Computational Intelligence: Modelling, Techniques and Applications*)  
(International)

**Paper Presented:**

A Revised Multi-choice Goal Programming Framework for Economic-Environmental Power Generation and Dispatch Problem.

Organized by: AICTE, IEEE & Computational Intelligence Society, September 27-28, 2013

**FUZZIEEE2013** (*IEEE International Conference on Fuzzy Systems*) (International)

**Paper Presented**

*Goal Programming for Economic -Environmental Power Generation - Dispatch Problems*

**Organized by:** IEEE Computational Intelligence Society Hyderabad, India July 7-10, 2013

**ICACC 2013** (*International Conference on Advance Computing and Communication*) (International)

**Papers Presented**

- i) Fuzzy Goal Programming Approach to Chance Constrained Multilevel Programming Problems
- ii) A linear Fuzzy Goal Programming Method for Solving Optimal Power Generation and Dispatch.

**Organized by:** Association of Computer Communication and Education for National Triumph Society Ranchi, Jharkhand, India March 16-17 2013

**ISMAMS 2011** (*National Conference on Multidisciplinary Applications of Mathematical Sciences*) (National)

**Paper Presented:**

An Interval-valued Iterative Goal Programming Approach for Solving Multiobjective fractional Programming Problems.

**Organized by:** Indian Society of Mathematics and Mathematical Sciences and DST & CSIR Gorokhpur, UP Feb 19-20, 2011

**IPSEC, 2010** (*National Seminar on Issues on Physical and Social Environmental Change*) (National)

**Paper Presented:**

Persistent Organic Pollutants: A Potential Threat to environment.

**Organized by:** Alipurduar College & UGC, 13<sup>th</sup>-14<sup>th</sup> February, 2010

**RTMMS 2010** (*National Conference on Recent Trends in Mathematical Modeling and Simulation*) (National)

**Paper Presented:**

Priority Based Fuzzy Goal Programming Approach for Fractional Multilevel Programming Problems.

**Organized by:** Dept. of Applied Mathematics, Institute of Technology, BHU Banaras Hindu University, Varanasi 18<sup>th</sup>-20<sup>th</sup> March, 2010

**ICCCNT 2010** (*International Conference on Computing, Communication and Networking*)  
(International)

**Paper Presented:**

A Priority based Interval-Valued Goal Programming Approach for Land Utilization Planning in Agricultural System: A Case Study

**Organized by:** Chettinad College of Engineering & Technology, Karur, Tamilnadu and IEEE Chennai, Karur, Tamilnadu, India, 29<sup>th</sup> – 31<sup>th</sup> July, 2010

**IISWBM, 2009** (*3<sup>rd</sup> International Conference on Decision on social Sciences for Sustainable Development*) (International)

**Papers Presented:**

(i) An Interval-valued Goal Programming Approach to Long-Range Land Utilization Plan in Agriculture System

(ii) A Genetic Algorithm Method to Fuzzy Goal Programming Formulation Based on Penalty Function.

**Organized by:** Indian Institute of Social Welfare and Business Management (IISWBM), Kolkata-700073, 14<sup>th</sup>-15<sup>th</sup> December, 2009

**ICRFSC 09** (*International Conference on Rough Set, Fuzzy Set and Soft Computing*)  
(International)

**Papers Presented:**

(i) A Fuzzy Goal Programming Approach for Solving Bilevel Programming Problems

(ii) A Stochastic Simulation Based Genetic Algorithm for Solving Chance Constrained Fuzzy Goal programming Problems

**Organized by:** Department of Mathematics, Tripura University, IRSS & ISFUMIP, Tripura University, Tripura, November 5– 7, 2009

**ICOREM 09** (*International Conference on Operations Research Applications in Engineering and Management*)  
(International)

**Paper Presented:**

A goal programming method for solving personnel planning problems with interval-valued resource goals in university management system.

**Organized by:** ANNA university, Tiruchira-palli, Tiruchira-palli-620024, May 27- 29, 2009

**ICIIS 09** (*4<sup>th</sup> International Conference on Industrial and Information Systems*)

**Paper Presented:**

(ii) A Linear Fuzzy Goal Programming Approach for solving patrol manpower deployment planning problems – A case study.

**Organized by:** IEEE Sri Lanka, IEEE Kharagpur, University of Peradeniya, Department of Electrical & Electronic Engineering, University of Peradeniya, Sri Lanka, December, 28- 31, 2009

**Workshop on Modern HVDC for Future of Power system,** IEEE Sri Lanka, University of Peradeniya, Sri Lanka & IEEE Kharagpur, December, 28, 2009