Pulak Samanta

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Date of Joining in this College and in this Service: *20-05-2002*

Research Interests

Rough Set Theory and its Applications, Data mining, Granular Computing, Modal Logic.

Background

Ph.D.: Department of Pure Mathematics, University of Calcutta.

Title of the Thesis: A Rough Set Theoretic and Logical Study : Consistency of Knowledge, Covering Based Approach and Allied Topics.

Thesis Advisor : Professor Mihir Kumar Chakraborty, Department of Pure Mathematics, University of Calcutta.

Master of Science: Department of Pure Mathematics, University of Calcutta.

Bachelor of Science: Ramakrishana Mission Residential College, Narendrapur under University of Calcutta.

Schooling: Fatepur Sreenata Institution (HS) and Ramakrishana Mission Siksha Mandir, Sarisha (MP).

Other Examination Qualified : NET(CSIR).

Research

Paper Published

Samanta P. (2019) : Rough Set Theoretic and Logical Study of Some Approximation Pairs Due to Pomykala. In: Yadav N., Yadav A., Bansal J., Deep K., Kim J. (eds) Harmony Search and Nature Inspired Optimization Algorithms. Advances in Intelligent Systems and Computing, vol 741. Springer, Singapore.

Samanta P. (2017) : A detailed Rough Set Theoretic and Logical Study of an approximation pair due to Pomykala viz. P_1 – pp. 82-95 – 11th International Conference of IMBIC on Mathematical Sciences for Advancement of Science and Technology (MSAST 2017).

Samanta P. (2015) : Rough Modus Ponens Rules and Corresponding Rough Consequence Logics based on Systems C_2 and C_5 – pp. 92-101 – 9th International Conference of IMBIC on Mathematical Sciences for Advancement of Science and Technology (MSAST 2015).

Samanta, P. and Chakraborty, M.K. (2015) : Interface of Rough Set Systems and Modal Logics: A Survey – pp. 114-137 – J. Peters et al. (Eds.): Transactions on Rough Sets XIX. Lecture Notes in Computer Science 8988 – Springer-Verlag 2015.

Samanta, P. and Chakraborty, M.K. (2011) : Generalized Rough Sets and Implication Lattices – pp. 183-201 – J. Peters et al. (Eds.): Transactions on Rough Sets XIV. Lecture Notes in Computer Science 6600 – Springer-Verlag 2011.

Samanta, P. and Chakraborty, M.K. (2009) : Covering Based Approaches to Rough Sets and Implication Lattices – pp. 127-134 – H. Sakai et al. (Eds.): RSFDGrC 2009, Lecture Notes in Computer Science 5908 – Springer-Verlag 2009.

Samanta, P. and Chakraborty, M.K. (2008) : On Extension of Dependency and Consistency Degrees of Two Knowledges Represented by Covering – pp. 351-364 – J. Peters et al. (Eds.): Transactions on Rough Sets, Volume IX. Lecture Notes in Computer Science 5390 – Springer-Verlag 2008.

Samanta, P. and Chakraborty, M.K. (2007) : Consistency-Degree Between Knowledges – pp. 133-141 – M. Kryszkiewicz et al. (Eds.): RSEISP 2007, Lecture Notes in Computer Science 4585 – Springer-Verlag 2007.

Invited Lectures in International Conferences

Rough Sets and Modal Logic – 6th Indian School on Logic and its Applications (Part II) – Association for Logic in India, Calcutta Logic Circle, Department of Production Engineering, Jadavpur University and Sivatosh Mookerjee Science Centre, Kolkata – August 22-27, 2016.

Consistency and Inconsistency Degree based on Generalized Rough Sets – Seminar on Logic and Cognition (SLC 2013) – Calcutta Logic Circle and School of Cognitive Science, Jadavpur University – 30-10-2013 to 01-11-2013.

An Overview on Dependency and Consistency degree of two Knowledges represented by Covering – International Workshop on Logic and Cognition – Calcutta Logic Circle, School of Cognitive Science, Jadavpur University and Bimal Krishana Matilal Centre of Logic, National Council of Education, Bengal – October 23-25, 2008.

Some Lectures in National Conferences

Partial Ordering of Inclusion Relations – National Seminar on Recent Advances in Mathematics and its Applications (RAMA-2017) –Department of Pure Mathematics, University of Calcutta – March 01-02, 2017.

Algebraic Structure based on Exact Sets – National Seminar on Recent Advances in Mathematics and its Applications (RAMA-2016) – Department of Pure Mathematics, University of Calcutta – February 24-25, 2016.

A study of rough logics in respect to tolerance relation – National Conference on Emerging Trends in Mathematics and Mathematical Sciences (NCETMMS-2015) – Calcutta Mathematical Society – December 17-19, 2015.

Neighbourhood operators based on relation – National Seminar on Recent Developments in Mathematics and its Applications (RDMA-2014) – Department of Pure Mathematics, University of Calcutta – 12-03-2014 .

Relation Based Implication Diagrams – National Seminar on Mathematics and its Applications – Department of Mathematics – March 30-31, 2013.

Generalized Approaches to Rough Sets – National Seminar on Recent Trends in Mathematics and its Applications – Department of Pure Mathematics, University of Calcutta – March 22, 2013.

Inconsistency based on generalized rough sets – National Seminar on Mathematics for Nonlinear Systems – March 17-18, 2013.

Some Lectures in State Level Conferences

Inconsistency Degree in respect of Generalized Rough Sets – 23rd West Bengal State Science and Technology Congress 2016 – Presidency University, Kolkata – February 28-29, 2016.

Mathematics – Special Training Programme for WBCS Preliminary Examination – Katwa College, District Employment Exchange (Labour Department, Government of West Bengal) – February 15-16, 2016.

Mathematics – Special Training Programme for IBPS Clerical Examination – Katwa College, District Employment Exchange (Labour Department, Government of West Bengal) – February 14-18, 2015.

Research Projects

Latest Project

Some Logical and Topological Studies of Rough Thery – Minor Research Project funded by UGC.

Outcome from the latest Project

Papers Published

Samanta P. (2019) : Rough Set Theoretic and Logical Study of Some Approximation Pairs Due to Pomykala. In: Yadav N., Yadav A., Bansal J., Deep K., Kim J. (eds) Harmony Search and Nature Inspired Optimization Algorithms. Advances in Intelligent Systems and Computing, vol 741. Springer, Singapore.

Link : $https://doi.org/10.1007/978-981-13-0761-4_45$

Samanta P. (2017) : A detailed Rough Set Theoretic and Logical Study of an approximation pair due to Pomykala viz. P_1 – pp. 82-95 – 11th International Conference of IMBIC on Mathematical Sciences for Advancement of Science and Technology (MSAST 2017).

Link : $https://drive.google.com/file/d/1eGjHEv8D-I0VIX7n78rM3Ql7oZjyQto7/view?usp=sharing$

Report of the Work Done :

During this project two papers were published. The achievements and outcomes are the following :
A detailed rough set theoretic and logical study of approximation pairs viz. P_1, P_2 and P_3 due to Pomykala made. Axiomatic systems and rules corresponding to P_1, P_2 and P_3 proposed. It is investigated that Overlap, Monotonicity, Compactness, Cut, The rule of substitution of equivalence, Deduction Theorem hold in all the cases. Rough Modus Ponens (RMP) rules were investigated for all the cases. Rough consequence logics based on RMP rules corresponding to the approximation pairs P_1, P_2 and P_3 due to Pomykala cultivated thoroughly. The hierarchy of RMP rules and Logics discussed.

Past Project/s

Covering based Rough set theory, its Logic and Consistency of Knowledge – (2010-2012) – Minor Research Project funded by UGC.

A Rough Set Theoretic and Logical Study of the Consistency of Knowledge and Allied Topics – (2006-2008) – Minor Research Project funded by UGC.

Membership

Member of International Body

International Rough Set Society.

Member of International Body

Indian Statistical Institute, Kolkata.

Association for Logic in India.

Calcutta Mathematical Society.

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