

# CURRICULUM VITAE

## Homeira Pajooesh

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## Educational Background

1. **B.Sc.** in Mathematics, Isfahan University of Technology, Isfahan, Iran, 1995.
2. **M.Sc.** Mathematics, Department of Mathematics, Isfahan University of Technology, Isfahan, Iran.
3. **Ph.D.**, Mathematics. I did part of my Ph.D at the Department of Mathematics, Shahid Beheshti University, Tehran, Iran and part at the University of Birmingham, UK. I defended it at Shahid Beheshti University October 2003. I finished my Ph.D. under the supervision of M. Mehdi Ebrahimi and Ralph Kopperman. The title of my thesis was "Lattice ordered rings and derivations".

## Professional Experience

1. **Research Visitor**, Department of Computer Science, University of Birmingham, U.K. (see <http://www.cs.bham.ac.uk/> ), Oct. 2002 - Oct. 2003.
2. **Post-Doc**, Department of computer science, University College Cork, Ireland, November 2003 to September 2005.
3. **Visitor**, Department of Mathematics, City College of CUNY, August 2005 - August 2006.
4. **Temporary Assistant Professor**, Department of Mathematics, Georgia Southern University, August 2006- May 2007.

## Research Interests

- Lattice ordered rings, Lattice ordered groups, Lattice theory and Category theory.
- Partial metrizable, topology.
- Pure mathematics related to computer science, especially domain theory, category theory, binary trees.

## Accepted Papers in Journals

1. **Inner derivations and homo-derivations on  $l$ -rings**, Ebrahimi, M. Mehdi and Pajooesh, H., Acta Math. Hungarica, Vol. 100 (1-2) (2003), 157-165.
2. **Positive derivations on (semi)prime  $l$ -rings**, Ebrahimi, M. Mehdi and Pajooesh, H., Hadronic J. 26 (2003), no. 5, 631-636.
3. **Strongly regular  $l$ -rings and derivations on them**, Ebrahimi, M. Mehdi and Pajooesh, H., Algebras Groups Geom, J. 20 (2003), no. 4, 451-459.
4. **Partial metrizable in value quantales**, Kopperman, R., Matthews, S., and Pajooesh, H., Applied General Topology, vol. 5, 2004, no. 1, 115-127.
5. **Composition of derivations on (semi)prime  $l$ -rings**, Ebrahimi, M. Mehdi and Pajooesh, H. Kyungpook Math Journal. 44 (2004), no. 2, 293-297.
6. **A survey of topological work at CEOL**, Pajooesh, H., Schellekens, M. Topology Atlas Invited Contributions, vol. 9, 2004, no. 2, 7pp.
7. **On the relation between balance and speed of algorithms**, O'Keeffe, M., Pajooesh, H., Schellekens, M., Hadronic Journal, Vol. 28, no.5, 531-559, 2005.
8. **Martindale  $po$ -rings and derivations on (semi)prime  $l$ -rings**, Ebrahimi, M. M., and Pajooesh, H., Algebras Groups Geom, vol. 22, no. 1, 109-115, 2005.
9. **Binary trees equipped by semivaluations**, Pajooesh, H., Schellekens, M., Quaestiones Mathematicae, 2005.
10. **Topological and categorical properties of binary trees**, Pajooesh. To appear in Applied General Topology, 2006 (vol. 7 no 2).
11. **Partial quasi metrics**, Hans-Peter Künzi, H. Pajooesh, Schellekens, M., Theoretical Computer Science, 2006.
12. **Positive derivations on lattice ordered rings of Matrices**, Pajooesh, H., Quaestiones Mathematicae.
13. **Convergence for partial metrics in value lattices'**, Kopperman, R., Matthews, S., Pajooesh, H., Topology and its applications.

## Accepted Papers in Proceedings

1. **Counter Parts of some Ring concepts for  $l$ -Rings**, Ebrahimi, M. Mehdi and Pajooesh, H, Proceeding of the 13th Algebra Seminar (Urmia, 2001), 105-108, Univ. Urmia, Urmia, 2001.

2. **Philosophical Issues in computer science**, Kopperman, R., Matthews, S., and Pajooohesh, H. Proceedings of the first Workshop on Philosophy and Informatics WSPI 2004, Cologne, Germany 2004. Gregor Buchel, Bertin Klein, and Thomas Roth-Berghofer (Eds.) German Research Center for Artificial Intelligence ISSN 0946-008X.
3. **Decision trees of algorithms and a semivaluation to measure their distance**, Pajooohesh, H., Schellekens, M. Proceedings of MFC-SIT 2004, to be published by Electronic Notes in Theoretical Computer Science, 161 (2006), 175-183.

### Submitted Papers

1. **Partial metrics spaces**, Buktin, M., Kopperman, R., Matthews, S., and Pajooohesh, H, American Mathematical Monthly.

### Preprints of papers

1. **Topologies on Lattice Ordered Groups**, Henriksen, M., Kopperman, R., Pajooohesh, H., and Richmond, T.
2. **A general separation theorem for algebraic structures**, Kalantari, I., Pajooohesh, H.

### Academic research experience

1. **Department of Mathematics of Cape Town University (South Africa)**, late January 2005 – March 12, 2005. I worked with Professor Hans-Peter Künzi during this period.
2. **Department of Mathematics Western Kentucky University**, March 18 2005 – April 8 2005. I worked with Professor Tom Richmond.
3. **Department of Mathematics City College New York**, April 9 2005 – May 24, 2005. I worked with Professor Ralph Kopperman.

## Conference and Seminar Lectures

1. **Counter Parts of Some Ring Concepts for  $l$ -Rings**, (joint work with M. Mehdi Ebrahimi), 13th Algebra Seminar, Urmia Univ., Urmia, Iran, 2001.
2. **Inner and Homo-Derivations on  $l$ -rings**, (joint work with M. Mehdi Ebrahimi), International Conf. on Applicable General Topology, Hacettepe Univ., Turkey, 2001.
3. **Universal  $p$ -Metrizability**, (joint with R. Kopperman, S. Matthews), Topology Seminar, Birmingham University, U.K., 2003
4. **Universal Partial Metrizability**, (joint work with R. Kopperman, S. Matthews), 55th British Mathematical Colloquium., Birmingham 2003.
5. **Lattice of binary trees**, (joint work with M. Schellekens), International Symposium on Domain Theory, Xi'an, China, May 10-14 2004.
6. **Lattice of binary trees and topologies on binary trees**, (joint work with M. Schellekens), 8th Galway Colloquim., June 21-22, 2004.
7. **Binary trees equipped with semivaluations**, (joint work with M. Schellekens), MFCSIT (Mathematical Foundations of Computer Science and Information Technology) 2004., July 22-23, 2004.
8. **Partial metrics and their completion into value lattices**, (joint work with Kopperman R., Matthews, S.), Discrete vs. Continuous Computational Models in Dagstuhl in Germany August 2004.
9. **Natural topologies and partial metrics for lattice ordered abelian groups**, (joint work with Henriksen, M., Kopperman R.), University of Cape Town, March 1, 2005.
10. **Binary trees and semivaluations**, (joint work with Schellekens. M.), University of Western Cape, South Africa, March 9, 2005.
11. **Partial metrics and metrics with a viewpoint**, (joint work with Kopperman R., Matthews, S.), Invited Special Session talk, 1004th AMS meeting, Western Kentucky University Bowling Green, Kentucky, March 19, 2005.
12. **Partial metrics and metrics with a base point**, (joint work with Kopperman R., Matthews, S.), Western Kentucky University, Bowling Green, Kentucky, April 5, 2005.
13. **Completions of Partial Metric Spaces**, (joint work with Kopperman R., Matthews, S.), At New York Seminar on General Topology and Topological Algebra, Baruch College, New York, April 14, 2005.

14. **Composition of positive derivations**, ORD05/UMS Conference on Lattice-Ordered Groups and  $f$ -Rings, April 23, 2005.
15. **Completions of Partial Metric Spaces into value quantales**, (joint work with Kopperman R., Matthews, S.), at New York Seminar on General Topology and Topological Algebra, Baruch College, New York, September 16, 2005.
16. **Topological and categorical properties of binary trees**, At New York Seminar on General Topology and Topological Algebra, Queens College, CUNY, November 10, 2005.
17. **Partial metrics**, (joint work with Kopperman R., Matthews, S.), AMS meeting, San Antonio, January 12-15, 2006.
18. **How derivations on a ring help us to understand its properties**, at New York Seminar on General Topology and Topological Algebra, Queens College, CUNY, April 20, 2006.
19. **How the speed of computer algorithms is determined by category theory and topology**, Georgia Southern University , April 28, 2006.
20. **A class of topologies on abelian lattice ordered groups**, (joint work with Henriksen, M., Kopperman R. and Richmond, T.), 21st Summer Conference on Topology and its Applications.
21. **Derivations and the structure of ordered rings**, Georgia Southern University , September 8, 2006.
22. **Derivations on lattice ordered rings**, The University of Texas at Tyler, December 11, 2006.
23. **Binary trees help us to study comparison bases algorithms and their compositions**, Framingham College, December 13, 2006.
24. **Composition of comparison based algorithms as an algebraic operation**, AMS meeting, New Orleans, January 5-8, 2007.
25. **Counting Flexagon Pats and Faces: An Algebraic Approach**, (joint work with Anderson, T., McLean B. and Smith, C.), MAA SE conference, March 16 17, 2007.