

# Abir Alharbi, PhD

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Mathematics Department  
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**Objective** Conduct research in Artificial Neural Networks, Numerical methods, optimization methods, and Genetic Algorithms, in different areas of Applied and Computational Mathematics. Develop advanced teaching methods for Mathematics.

**Experience** 2000– King Saud University Riyadh ,Saudi Arabia

## **Assistant Professor**

- Currently Head of women section of Math Department in King Saud University.
- Teaching in the mathematics department the following courses: 253M Numerical Analysis, 434M Graph Theory, 102M Advanced Calculus, 101M Calculus, 151M Discrete Math and 244M Linear algebra for computer science students.
- Supervising students on graduate projects (499M research).
- The supervisor of the computer lab in the Math Department.

## **Membership of Committees**

- Final exams committee in King Saud University.
- Graduate ceremony committee in King Saud University.
- Committee of supervisors of computer labs in King Saud University.

### **Associations and Seminars**

- Member of the Saudi Association of Math.
- Attended annual Saudi association of math seminars.
- Gave a Seminar on Matlab in teaching math courses (2002).
- Gave a Seminar on Mathematica in teaching math courses (2005).
- Gave a Seminar on Scientific Workplace in teaching math courses (2003).

### **Publications**

- Abir Alharbi, E. Alahmadi, "A Neural Network method for the unsteady flow past a circular cylinder" , FEJAM, 2008.
- Abir Alharbi, W. Rand, R. Rolio, "The Defined Cliffs variant in Dynamic Environment, A Case Study Using the Shaky Ladder Hyperplane-Defined Functions", The Genetic and Evolutionary Computation Conference (GECCO-2007), ,University College London, London, England, United Kingdom, July 7-11, 2007.
- Abir Alharbi, W. Rand, R. Rolio , "Understanding the Semantics of Genetic Algorithms in Dynamic Environments A case Study Using the Shaky Ladder Hyperplane-Defined Functions", EvoSTOC2007, Fourth European Workshop on Evolutionary Algorithms in Stochastic and Dynamic Environments, incorporated in Evo\* 2007, Valencia, Spain, 11-13 April, 2007.
- Abir Alharbi, PhD Thesis "A Neurocomputing Approach for solving Partial Differential Equations", Florida institute of technology, Melbourne, Florida, 1997.

### **Current Research**

- Abir Alharbi, E.S. Fahmy, "Approximate solutions for Time-Delayed Convective Fisher equation using ADM-Pade technique", Submitted to Journal of Mathematical and Computer modeling, 2008.
- Abir Alharbi, E.S. Fahmy, "ADM-Pade solutions for Generalized Burgers system and Burgers-Huxley system of two coupled equations", submitted to the Journal of Computational and Applied Mathematics, 2008.
- Abir Alharbi, W. Rand, "The Shaky Ladder Hyperplane-Defined Functions and classical Dynamic problems",2008.
- "Mathematics with Matlab" a book to be published 2009.

### **Education**

- 1994–1997 Florida Institute of Technology Melbourne , Fl.
- Doctor of Philosophy in Applied Mathematics. Major in Artificial Neural Networks.
  - Developed Matlab programs for various Artificial Neural networks as an appendix to a book "Introduction to Artificial Neural Networks "by L. Fausset,

1992–1994                      California State University                      Northridge , CA.  
▪ Masters of Science in mathematics.

1986–1990                      King Saud University                      Riyadh , KSA.  
▪ B.S. in mathematics

**Areas of Research**      Artificial Neural Networks, Genetic algorithms, Optimization methods, Numerical methods, Fluid dynamics, applications in different areas of Applied and Computational Mathematics.