

Afrooz Ebadat

CURRENTLY

PhD Candidate in Electrical Engineering, ACCESS Automatic Control Lab, Royal Institute of Technology, Stockholm

SUMMARY OF EDUCATIONAL QUALIFICATION

Master of Science in Control Engineering, 2008-2011. School of electrical and computer engineering, Shiraz university, Shiraz, Iran.

Thesis Title: *Application of Control methods in Optimal Oil Well Placement*
Supervisor: Dr. P. Kaeimaghaee (Ph. D. Amir Kabir University of Technology, 1995)
Course work average: **19.12/20**
Thesis Grade out of 20: **19.8**

Bachelor of Science in Electrical Engineering (Control), 2004-2008. School of electrical and computer engineering, Shiraz university, Shiraz, Iran.

Project Title: *Simulation of Educational Environment for Industrial Control*
Overall GPA: **17.45/20**

RESEARCH INTERESTS

- ✓ System identification and Modeling of dynamical systems
 - ✓ Model Predictive Control (MPC)
 - ✓ Fuzzy Systems : Modeling and Control
 - ✓ Optimization and Optimal control
 - ✓ Iterative learning controllers, intelligent control and automatic control issues
 - ✓ Application: oil field development, modeling and production optimization
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PUBLICATIONS AND PAPERS

1. **Conf. Proceedings: A. Ebadat**, N. Noroozi, A.A. Safavi, and S. H. Mousavi, 'Modeling and Control of Nonlinear Systems Using Novel Fuzzy Wavelet Networks: The Modeling Approach', *49th IEEE Conference on Decision and Control*, December 15-17, 2010, Atlanta, GA, USA
2. **Journal Article: Afrooz Ebadat**, Navid Noroozi, Ali Akbar Safavi, Seyyed Hossein Mousavi, 'New fuzzy wavelet network for modeling and control: The modeling approach', *Journal of Communications in Nonlinear Science and Numerical Simulation*, Elsevier, vol6, issue8, 2011.
3. **Journal Article: Seyyed Hossein Mousavi**, Navid Noroozi, Ali Akbar Safavi, **Afrooz Ebadat**, 'Modeling and control of nonlinear systems using novel fuzzy wavelet networks: The output adaptive control approach' *Journal of Communications in Nonlinear Science and Numerical Simulation*, Elsevier, 2011
4. **Conf. Proceedings: A. Ebadat**, P. Karimaghaee and H. Mahdiyar, 'Application of Gradient-Based Control Methods in Efficient Oil well Placement Through Dynamic Fuzzy Neural Network Modeling', Springer, CCIS 194, pp. 616–630, 2011 also DEIS2011, London, 22-24 July, 2011
5. **Conf. Proceeding: A. Ebadat**, P. Karimaghaee, M. Jesmani, 'Optimization-Based Fuzzy Iterative Learning Control', *Iranian Conference on Electrical Engineering*, 2011, Tehran, Iran

6. **Conf. Proceedings:** M. Jesmani, F. Shabani, P. Karimaghaee, **A. Ebadat**, ‘Singular Value Decomposition Assisted Ensemble Kalman Filter for History Matching Problem, *Iranian Conference on Electrical Engineering*, 2011, Tehran, Iran
7. **Journal Article:** **A. Ebadat** and P. Karimaghaee, “Efficient Well Placement Using Gradient-Based Control Methods Through Dynamic Modeling”, *journal of petroleum science & engineering*, Elsevier, 2012, available online
8. **Conf. Proceedings:** A. Ebadat, P. Karimaghaee, ” Genetic Algorithm Assisted Fuzzy Iterative Learning Optimizer for Automatic Optimization of Oil Well Placement under Production Constraints”, IFAC workshop on Control Applications of Optimization, Volume 15, Part 1, 2012, Rimini, Italy.

ACADEMIC PROJECTS

- ✓ Simulation of Arm Robot with 5 Degree of Freedom Using Virtual Reality Toolbox, Matlab
- ✓ **Nonlinear Control:** Design and simulation of different nonlinear controllers (backstepping, sliding mode, . . .) for Inverted Pendulum
- ✓ **Multivariable Systems Control:** Design LOQ regulator for MIMO systems using hankel singular values
- ✓ **Optimal Control:** Solving Ricatti Equation employing Neural Network
- ✓ **Adaptive Control:** Transient-Performance improvement with a class of Adaptive Controllers
- ✓ **System Identification:** Improvement of Fuzzy Hyperbolic Modeling and identification employing least square and levenberg marquardt method.
- ✓ **Fuzzy Control:** Applying Orthogonal Least Square Methods to Dynamic Fuzzy Neural Networks
- ✓ **System Identification:** Designing and tuning PID controller using Genetic Algorithm (GA).

COMPUTER SKILLS

- ✓ **MATLAB:** Programming ,Simulink, Virtual Reality, Optimization Toolbox and fuzzy toolbox.
- ✓ **Electrical Engineering Softwares:** PLC Ladder Diagram (Siemens)
- ✓ **Oil Reservoir Simulation Software:** Eclipse100
- ✓ **Computer Applications:** Microsoft Office
- ✓ **Programming Languages:** C++
- ✓ **Design Software:** Photoshop, AutoCad

CERTIFICATION

- ✓ Reservoir Simulation, Lectured by Oliver Guillon, Guy Barre, Held in Shiraz University by Total Company, 25-28 May 2010.