

# Mohsen Rezasoltani

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## EDUCATION

### **Texas A&M University, College Station, Texas**

*Doctor of Philosophy in Mechanical Engineering,*

Aug 2014

Cumulative GPR: 4.00

### **Sharif University of Technology, Tehran, Iran**

*Master of Science in Mechanical Engineering,*

Jan 2008

Cumulative GPR: 3.81

*Bachelor of Science in Mechanical Engineering/Minor in Thermo-fluid,*

Sep 2005

Cumulative GPR: 3.57

## EXPERIENCE

### **Turbomachinery Performance and Flow Research Lab., Texas A&M University, College Station, TX**

*Research Assistant*

Sep 2011-Present

- Design and analysis of Ultra-High efficiency core gas turbine with stator internal combustion
- Performed measurement of three stage research turbine
- Evaluated and analyzed of film cooling effectiveness on contoured and non-contoured endwall and four different blade tip cooling configurations.
- Measured interstage aerodynamics parameters of axisymmetric contoured endwall and non- contoured endwall for comparing the secondary flow zones, loss coefficient and efficiency.

### **Middle-East Turbo Compressor Co. (Turbo Tech), Tehran, Iran**

*Project Manager*

Oct 2010-Sep 2011

- Investigated a comprehensive study of the effect of using gas turbine inlet air cooling on power and efficiency of power plants.
- Directly managed a **budget of \$220,000**.
- Supervised **6 engineers**.

### **Middle-East PetroGas Co., Tehran, Iran**

*Gas Turbine Specialist*

Jan 2007-Oct 2010

- Developed and fabricated an Operator Training Simulator for Siemens GT10B twin shaft gas turbines and Demag Delaval Compressors, funded by NIGC, grant total volume of \$350,000.
- Programmed and installed performance monitoring and fault diagnosis systems for Siemens GT10B twin shaft gas turbines and Demag Delaval Compressors, funded NIGC, grant total of \$350,000.
- Feasibility study and preliminary design of heat recovery boiler for installing in gas pipeline compression station, funded by National Iranian Gas Company (NIGC), grant total volume of \$60,000.
- Designed and implemented of a tester for both fuel control governor and control system of the Siemens V94.2 gas turbine and Siemens E30 steam turbine, funded by MECO, grant total of \$400,000.
- Computed and built an Operator Training Simulator for Siemens V94.2 gas turbine and Siemens E30 steam turbine, funded by MECO, grant total of \$350,000.
- Performance test and gas path analysis of PG9171E (Frame 9E) GE Gas turbine, funded by Fars Power plant.

## SKILLS

*Computer Skills:* AutoCAD, SolidWorks, Matlab/Simulink, Fluent, CFX, EES, Thermo Flow, SAPPHIRE, Microsoft Office (Word, Excel, Power Point, Publisher, Outlook), Microsoft Control Project

*Programming Language:* FORTRAN, Turbo-Pascal, C++

## HONORS

- Texas A&M University mechanical engineering graduate (Charles Crawford) Fellowship, 2011
- Award of participation in RoboCup International Competition, Japan, Osaka, 2005.
- Ranked 162th, among more than 400,000 participants in the national university entrance exam, 2001.
- Selected from 700000 participants for National Organization for Development of Exceptional Talents (NODET), 1997.

## RESEARCH PROJECT

- Performance prediction of axial flow compressor using stage characteristic curve and meanline design.
- Thermodynamic model of gas turbine considering turbine blade cooling.
- Investigated the effect of surge and stall phenomena in axial flow compressor.
- CFD analysis of the effect of geometric changes on turbine blades performance.
- Designed, computed, controlled and fabricated a three different mobile robot for moving in unstructured environments such as earthquake situations or Mars missions, Funded by IDRO, \$80,000.
- Reliability assessment and Risk analysis of HVAC system for a factory using SAPHIRE.
- Calculated, Manufactured and Installed of Circular Loom machine, Funded by Shadiloon Co.

## PROFESSIONAL AFFILIATION

- Sharif University of Technology Rescue Robot Team, (2004-2005).
- Sharif University of Technology Human Power Vehicle Team (2003-2004).
- Pi Tau Sigma - National Mechanical Engineering Honor Society (2013-present).

## PATENTS

- Rescue robot high maneuver manipulator using parallel mechanism, registered in the National Invention Registration Office, Tehran, 2008 (Patent No.: 49007), Fabricated in Sharif University of Technology.
- Hospital bed to facilitate patient movement between beds, registered in the National Invention Registration Office, Tehran, 2008 (Patent No.: 52079), Fabricated in Valiasr Technical College.

## PUBLICATIONS

### *Journal Papers:*

- Zomorodian. R., **Rezasoltani. M.**, Ghofrani. M. B., 2011, "Static and Dynamic Neural Networks for Simulation and Optimization of Cogeneration Systems", ", International Journal of Energy and Environmental Engineering, Vol. 2, Issue1, pp.51-61.
- Zomorodian. R., **Rezasoltani. M.**, Ghofrani. M. B., 2010, "A New Approach to Optimization of Cogeneration Systems Using Genetic Algorithm", International Journal of Energy and Environmental Engineering, Vol 1, Issue1, pp.37-48.

### *Conference Papers:*

- **Rezasoltani, M.**, Schobeiri, M.T., and Han, J.C., 2013, "Experimental Investigation of the Effect of Purge Flow on Film Cooling Effectiveness on a Rotating Turbine with Non-Axisymmetric Endwall Contouring", accepted in ASME Turbo Expo, June 3-7, San Antonio, Texas, GT2013-94807.
- Karrabi. H., **Rezasoltani. M.**, 2013 "Study The Effect Of Geometric Changes On Turbine Blades Performance", accepted in ASME Turbo Expo, June 3-7, San Antonio, Texas, GT2013-95462.
- Karrabi. H., **Rezasoltani. M.**, "The Effect of Blade Lean, Twist and Bow on the Performance of Axial Turbine at Design Point". Proceedings of ASME 2011 International Mechanical Engineering Congress & Exhibition, Denver, Colorado, USA, Paper No. IMECE2011-65058, pp. 965-972.
- Kebriaee. M. H., Karrabi. H., **Rezasoltani. M.**, Saidi. M. H., "Study Of Behavior Of Two Phase Flow In Vertical Large Diameter Pipe". ASME 2010 International Mechanical Engineering Congress & Exhibition, Vancouver, British Columbia, Canada, Paper no. IMECE2010-39659 pp. 1735-1741.
- Hosseini. S. H. R., Khaledi. H., **Rezasoltani. M.**, 2009, "New Model Based Gas Turbine Fault Diagnostics Using 1D Engine Model and Nonlinear Identification Systems", Proceedings of ASME Turbo Expo, Orlando, FL USA, GT2009-59439.
- Aghaei. V., Khaledi. H., **Rezasoltani. M.**, 2009, "Promoting Performance Test Capabilities using gas path analysis: A case study", Proceedings of ASME Turbo Expo, Orlando, FL USA, GT2009-59398.
- **Rezasoltani. M.**, Khaledi. H., Ghofrani. M. B., 2008, "Optimum design and sensitivity analysis of axial flow compressor with combination of analytical method, qualitative and quantitative rules and genetic algorithm", Proceedings of ASME Turbo Expo, Berlin, Germany, GT2008-51033.

## WORK AUTHORIZATION

Eligible for practical training; F-1 Visa Holder