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# Curriculum Vitae

## Salar Basiri

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## Objective

- Qualification for Continuing Education
  - Occupation Qualification
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## Personal Information

- Date of Birth: September 8<sup>th</sup>, 1985
  - Place of Birth: Tehran, Iran
  - Marital Status: Single
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## Responsibility

- CEO and Chairman of Idea Land Smart Messaging Solutions Company Ltd
  - Chairman of the Board at Zarin Marlik Caspian Invention and Innovation Institute
  - Chairman of the Board at Idea Environment Monitoring Company Ltd
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## Honors, Awards and Membership

- Second Winner in 6<sup>th</sup> Khwarizmi youth award, Tehran, 2004. (I was a member of a 4 members team.)
  - o *Project Title: Goniophotometer*
- Admitted as a master student in University of Guilan for MSc as an excellent student (without passing the nationwide universities entrance exam)
- Honorable young researcher award of Guilan province, Rasht, 2007
- Honorable young researcher award of the University of Guilan, Rasht, 2007
- Honorable Innovative project award in research week festival, Rasht, 2008
- Honorable young researcher award in Guilan province research and technology festival, Rasht, 2009
- Iranian National Elites Foundation 3<sup>rd</sup> level patent development grant for Electronic Leitner Box (About 3k\$)
- Honorable Tehran City 4<sup>th</sup> Khwarizmi youth award, Tehran, 2001.
  - o *Project Title: Laser Distance Meter*
- First Winner of Student Section in Best Idea Festival organized by Guilan Science and Technology Park, Rasht, Iran, 2007
  - o *Projects Titles: Simultaneous 8 Channel ICP Compatible Accelerometer, Electronic Leitner Box, Intelligent Puzzle Solver Robot, Laser Distance Meter*
- Member of Iranian National Elites Foundation
- IEEE student Member in 2008

- Second Winner in Alborz high school research festival, Tehran, 1999
  - o *Project Title: RC Airship*

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## Education

### Master of Science (2007-2010)

- Mechanical Engineering, Applied Design, The University of Guilan, Department of Mechanical Engineering
  - o Supervisor: Dr Ahmad Bagheri, Dr Nader Nariman-zadeh
  - o Thesis Title: Design, Fabrication and Control of an Aerial Robot with Terrain Tracking Ability Using Fuzzy Based Image Processing

### Bachelor of Science (2003-2007)

- Mechanical Engineering, Solid Design, The University of Guilan, Department of Mechanical Engineering
  - o Supervisor: Dr. Ahmad Bagheri
  - o Thesis Title: Control of a manipulator by using image processing

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## Publication

### Conference papers

- Ahmad Bagheri, **Salar Basiri**, "Design of a Vision System as a Coordinate Measurement Sensor in a 2D Gantry Crane Control System", IEEE 5th International Colloquium on Signal Processing and its Application (CSPA2009), 6-8 March 2009, Kuala Lumpur, Malaysia
- Ahmad Bagheri, Saber Ghasembeigi, **Salar Basiri**, "Robust Control Frequency Analysis of a Moving Walking Bipedal Robot", IEEE 5th International Colloquium on Signal Processing and its Application (CSPA) 2009, 6-8 March 2009, Kuala Lumpur, Malaysia
- Majid Alitavoli, **Salar Basiri**, Ahmad Bagheri, "Using Image Processing as a Measuring Device in Close Loop Control System and System Behavior Analysis", The 6th WSEAS International Conference on APPLICATIONS of ELECTRICAL ENGINEERING (AEE '07), May 27-29, 2007, Istanbul, Turkey
- Ahmad Bagheri, Shahed Aliakbar, **Salar Basiri**, "Modeling, Stress Analyses and Design of an Underwater Remotely Operated Vehicle (ROV)" Industrial Simulation Conference 2007, Technical University of Delft, 11-13 June 2007, , Delft, Netherland
- Majid Alitavoli, **Salar Basiri**, Hasan Mallaei, "The Puzzle Solver Intelligent Robot (PSR) Based on Real Time Image Processing", 6th WSEAS Int. Conf. on SIGNAL PROCESSING, COMPUTATIONAL GEOMETRY & ARTIFICIAL VISION (ISCGAV'06), 18-20 August 2006, Crete Island, Greece
- Ahmad Bagheri, Majid Alitavoli, Mehdi Aghakashi, **Salar Basiri**, "Modeling of water hammer phenomenon in simple irrigation system and comparing the analytical to experimental results", industrial Simulation Conference 2006, 5-7 June 2006, University of Palermo, Palermo, Italy
- Ahmad Bagheri, **Salar Basiri**, " Design and fabrication of an unmanned airship for environmental variable monitoring", 18<sup>th</sup> Annual International Iranian Conference on Mechanical Engineering (ISME2010) , Sharif University, 11-13 May 2010, Tehran, Iran (*In Persian*)

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- Ahmad Bagheri, Sara Halaji, **Salar Basiri**, "Design of horizontal trust unit for a remotely operated underwater robot", 16<sup>th</sup> Annual International Iranian Conference on Mechanical Engineering (ISME2008), Shahid Bahonar University of Kerman, 13-15 May 2010, Kerman, Iran (*In Persian*)
- Nosaratollah Fallah, Malekmohammad Ranjbar, **Salar Basiri**, "Design and make a seismic test table and ICP compatible accelerometer data logger, 5th International conference on seismology and earthquake Engineering, SEE5, May 2007, Tehran, Iran (*In Persian*)
- Ahmad Bagher, Amir Hajiloo, **Salar Basiri**, "Determination of kinematic parameters of a passive bipedal robot by using image processing", 16<sup>th</sup> Annual International Iranian Conference on Mechanical Engineering (ISME2006), Isfahan University of Technology, 11-13 May 2010, Isfahan, Iran (*In Persian*)
- Majid Alitavoli, **Salar Basiri**, Hassan Mallaei, "Intelligent Puzzle Solver Robot" 2<sup>nd</sup> International Congress on Manufacturing Engineering (TICME2005) 12-15 December 2005, Tehran, Iran (*In Persian*)

### Journals

- Majid Alitavoli, **Salar Basiri**, Hasan Mallaei, Sina Rezazade osmanvandani, "Application of Image Processing For Solving Numerical Puzzles Using A 3 DOF Robot", WSEAS Transaction on Circuits and Systems, Vol 5, Sep2005, pp1452-1458
- Ahmad Bagheri, Amir Hajiloo, **Salar Basiri**, "Determination of kinematic parameters of a passive bipedal robot by using image processing", WSEAS Transaction on Computer, Vol4, Nov2005, pp1718-1724
- Majid Alitavoli, **Salar Basiri**, Saeed Basiri, "Image Processing Based Tracking System", WSEAS TRANSACTIONS on SIGNAL PROCESSING, Issue 12, Volume 2, December 2006, pp.1558-1662

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### Skills

- Microcontroller and Embedded System Design: BASCOM, DXP, AVR Studio, Proteus (Fluent)
- Programming Languages: Delphi, C++, PASCAL and MATLAB (Fluent)
- Other: MS Office, J2ME application development for mobile, JOOMLA CMS (Amateur)

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### Teaching Experiences

- Lecturer (part time) in the Lahidjan branch of Islamic Azad University, Lahidjan, Iran, Teaching in Mechanical Engineering Faculty the following courses:
  - o Mechanism Design
  - o Mechanical Vibration
  - o Dynamic
  - o Industrial Design
- Lecturer (part time) in the Institute of higher education (Ahrar), Rasht, Iran, the following courses:
  - o Fundamentals of Electricity
  - o Electricity in HVAC
  - o Control in HVAC
  - o Physic
  - o Entrepreneurship
  - o Industrial Design

- Educational Workshops
    - o Image Processing workshop, University of Guilan, Faculty of Engineering, December 2007
    - o AVR Microcontrollers, University of Guilan, Faculty of Engineering, December 2007
  - Electronics and Robotics Teacher (part time) in the National Organization for Development of Exceptional Talents (NODET, also known as SAMPAD) High School, Rasht, Iran, 2007-2008
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## Patents

- Device for User Interaction with Electronic Devices in Accelerometer Equipped Ring Form, Iran Patent No 79624, Patented in 2013
  - Electronic Leitner Box, Iran Patent No 38010, Patented in 2006
    - o Iranian National Elites Foundation 3<sup>rd</sup> level patent development grant
    - o This is a cool electronic gadget for learning second language and extend your vocabulary
    - o Specifications: 65k Color LCD, MMC card slot, USB Connectivity, Very simple and user friendly interface, Using low cost and high performance 8-bit AVR MCUs
  - Laser Distance meter , Iran Patent No 27669, Patented in 2001
    - o Honorable Tehran City 4<sup>th</sup> Khwarizmi youth award
    - o Using laser and triangulation method to measure distance and length
    - o Specifications: Measuring range is up to 10m, Using 3-digit 7-segment display, EPROM and look-up table based design
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## Research and Fabrication Experiences

### 2009-2012

- Design and Implementation of a Wireless Sensor Network for monitoring corrosion in cities gas pipeline and refineries. This work was done under research contract No 110017 between University of Guilan and Guilan Province Gas Company. I was co-administrative in this project and designed and made electronic circuits.

### 2008-2010

- Design and Fabrication of two Unmanned Airship with image processing ability.(My MSc Project)

### 2005-2006

- Design and made of a Simultaneous 8 Channel ICP Compatible Accelerometer Data Logger for Civil Department of University of Guilan.

### 2003-2004

- Developing User Interface Program for DAQ Card in High Voltage Laboratory of University of Tehran By Delphi and C++Builder Programming Development Tools
  - Design and Made Some Mechanical Parts of Goniophotometer in Light Lab of University of Tehran
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## My MSc Thesis Abstract

- In recent years, mobile robots use for many purposes. One of the most important types of mobile robots is flying robots. These robots in various types include fixed wing, rotary wing, and airship have been used for

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Video surveillance, Traffic condition monitoring, Environmental variable monitoring, etc. There is need for intelligence for these type of robots based on their missions.

For flying platform, Airships duo to their safe fly and low payload to cost and time ratio are commonly used for research projects. The goal of this study is design fabrication and control of an aerial robot based on airship flying platform. The robotic airship must carry various avionics instruments include sensors and processor to implement some control algorithms. Based on this goal two airships has been designed and fabricated, the small one can use for indoor use and laboratory, and the big one is for real environment.

Based on the mission of these airships, avionics systems include wireless data and video link, inertial sensor and electronic compass, camera and computer, base station for send and receive data and commands and other instruments have been designed and implemented for each of airships.

One of the most important methods for increase aerial robot intelligent is using image processing for guidance and control. In this study, based on real time image processing techniques, a path planner and trajectory tracker has been designed. This system can extract command based on airship camera images, and send true command to actuators for road following. Fuzzy rules have been used for image processing, direction extraction and controller. Dou to highly non linearity of airship dynamic model, this type of controller has been used. Three DOF and six DOF dynamic modeling is used for checking system response to various inputs and design fuzzy rule base.

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