

# MASOUMEH GHANBARPOUR MAMAGHANI

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Address:  
Department of Electrical & Computer Engineering  
University of California, Santa Cruz  
Baskin Engineering 2  
UCSC, CA 95064, USA

Email: maghanba@ucsc.edu

## RESEARCH INTERESTS

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Automation and Control Systems,  
Optimization, Model Predictive Control  
Reinforcement & Machine Learning  
Signal Processing

## EDUCATION

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| 2018 – Present | <b>University of California Santa Cruz, Santa Cruz, USA</b><br>Doctor of Philosophy (Ph.D.)<br>Major: Control system & Automation   |
| 2008 – 2015    | <b>RWTH Aachen, Aachen, Germany</b><br>Master of Science (M.Sc.)<br>Major: Communication Engineering (GPA: <b>3.65/4</b> )<br>Master Thesis in Institute of Automatic Control (IRT)<br>Advisors: <b>Prof. Dr. Rudolf Mathar, Prof. Dr. Abel</b><br>Topic of Master Thesis: “ <i>Development of a Model Predictive Control Concept for Vehicle Collision Avoidance</i> ” (Grade: <b>4/4</b> )<br><b>Published Paper:</b> <a href="#">Centralized non-convex model predictive control for cooperative collision avoidance of networked vehicles, Intelligent Control (ISIC), 2014 IEEE International Symposium on. IEEE, 2014</a> |
| 2007 – 2008    | <b>Mastering Language Skills in Both English and German</b>   |
| 2001 – 2007    | <b>Azad University Central Tehran Branch, Tehran, Iran</b><br>Bachelor of Science (B.Sc.)<br>Major: Electrical Engineering (GPA: <b>3.42/4</b> )<br>Advisor: <b>Dr. Arash Dana</b><br>Topic of Bachelor Thesis: “ <i>Immune System for Misbehavior Detection in Mobile Ad-Hoc Networks</i> ”  |
| 2001 – 2007    | <b>Iran University of Science &amp; Technology, Teheran, Iran</b><br>Bachelor of Science (B.Sc.)<br>Major: Applied Mathematics (GPA: <b>3.29/4</b> )<br>Advisor: <b>Prof. Dr. Mahdi Alaeiyan</b><br>Topic of Bachelor Thesis: “ <i>Distance-Transitive &amp; Distance Regular Graphs</i> ”  |
| 1997 – 2001    | <b>Bentolhoda Pre-University &amp; Narjes High School Study, Tehran, Iran</b><br>Diploma in Physics and Mathematics Discipline (GPA: 19.46/20)  |

## WORK EXPERIENCE

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11/2016 – 05/2017	<b>Production Engineering of E-Mobility Components (PEM), RWTH Aachen University, Aachen, Germany</b> University Project Topic: Control & Indoor Navigation for a Quadcopter
01/2016 – 08/2016	<b>Institute of Automatic Control (IRT), RWTH Aachen University, Aachen, Germany</b> Research Assistant Topic: Pressure Estimation Using Structural Vibration Measurements of Diesel Engine
12/2014 – 03/2015	<b>Fraunhofer Institute for Production Technology (IPT), Aachen, Germany</b> Trainee Topic: Accurate Wave front-based Active Alignment of Multi-element Optical System
2011 – 2012	<b>Institute of Automatic Control (IRT), RWTH Aachen University, Aachen, Germany</b> Student Research Assistant Topic: Control Systems and Specifically Model-based Predictive Control (MPC) Optimization Techniques System Identification: Neural Networks & Local Linear Model Tree (LOLIMOT) Automatic Control and Dynamic Optimization (Acado) Toolkit
07/2006 – 09/2006	<b>Mobile Communication Company of Iran, Tehran, Iran</b> Trainee Topic: Mobile Essential Basis

## COURSEWORK

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Summer 2017	Machine Learning (Online Course Stanford University, self-study)
Winter 2016	Automotive I, III, Fundamental of Internal Combustion Engine in RWTH-Aachen University (without Taking the Exam)
Summer 2016	An Introduction to Interactive Programming in Python (Part1 &2, Online Course from Rice University)
Winter 2015	Introduction to Robotics (Online Course, Stanford University)
Summer 2012	Convex Optimization (Online Course Stanford University, self-Study)

### Management Courses

Summer 2010	Entrepreneurial Marketing
Fall 2006	Project Control
Winter 2005	Principle of Management & Theory of Organization
Fall & Winter 2004	Operation Research I&II

## EXPERIMENTAL EXPERIENCE

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Summer 2011	<b>Institute for Networked Systems, RWTH Aachen University, Aachen, Germany</b> Laboratory: Network Programming for embedded Systems
Winter 2010	<b>Institute of Communication Systems, RWTH Aachen, Aachen, Germany</b> Laboratory: Communications Engineering
Winter 2010	<b>Institute of Communication Systems, RWTH Aachen University, Aachen, Germany</b> Seminar: Communications Engineering
Fall 2009	<b>Institute for Networked Systems, RWTH Aachen University, Aachen, Germany</b> Laboratory: Mobile Radio Networks

## HONORS

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Fall 2008	Admission to <b>RWTH-Aachen University</b> and <b>Sharif University of Technology</b> (the best university of Iran) for Master Degree of Electrical Engineering (Attended RWTH-Aachen University)
2001–2007	Successfully completed <b>two Bachelor Studies at the same time</b> in Tehran
Winter 2005	<b>Top student</b> among B.Sc. undergraduate students of <b>Mathematics</b> , Iran University of Science & Technology
Fall 2001	Awarded for <b>Full Scholarship</b> from Iran University of Science & Technology for Bachelor Study in Applied Mathematics
1998–2001	<b>Top Student</b> of Narjes High School

## TEACHING EXPERIENCE

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Summer 2008	Tutor of English for High school Students in Mehr Taha Institute
2001-2002	Private Tutor of Calculus for Pre-University Students

## LANGUAGE KNOWLEDGE

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Persian	Mother Language
English	Fluent
German	Very good
Spanish	Basic knowledge
Arabic	Basic knowledge
Turkish	Basic knowledge

## IT KNOWLEDGE

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MATLAB	Advanced	MS Office	Advanced
Simulink	Advanced	Inkscape	Very Good
C++	Advanced	Arduino & C Programing	Advanced
Python	Advanced	Processing	Very Good
Zemax	Very Good	R Programming	Very Good
Latex	Advanced	Mission Planner	Very Good