Curriculum Vitae

Name and Surname : **Mehmet Kursat Yalcin**

Adress : Nigde University
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EDUCATIONAL INFORMATION

- 2004-2011 PhD, Control and Automation Engineering, Istanbul Technical University
    - Thesis Title: "Modeling and Control of Antagonistic Variable Impedance Actuators in Port Controlled Hamiltonian Framework"
    - Supervisor: Prof. Dr. Hakan TEMELTAŞ
- 2000-2003 MSc, Electrical and Electronics Engineering, Nigde University
    - Thesis Title: "Mobile Robot Application"
    - Supervisor: Prof. Dr. Murat UZAM
- 1995-1999 BSc, Electrical and Electronics Engineering (English), Cukurova University with a GPA of 3.13 out of 4.00
    - Thesis Title: "Liquid Level Transmitter"
    - Supervisor: Asst. Prof. Cabbar Veysel BAYSAL
- 1988-1995 Elazığ Anatolian High School (English)

WORKING EXPERIENCE

- 2012- … Assistant Professor and Head of Mechatronics Engineering Department, Nigde University
- 2010-2011 Fall Semester Turkish Air Force Academy, Visiting Lecturer
- 2008, 2009 and 2011 Turkish Air Force Academy Science Festival and Graduation Project Co-Supervision
- 2008-2009 Fall Semester Turkish Air Force Academy, Microcontrollers Course
- 2008-2009 Spring Semester Turkish Air Force Academy, Visiting Lecturer (Microprocessor Based System Design)
- 2004-2012 Research Assistant, Robotics Lab., Department of Control Engineering,

Istanbul Technical University, Istanbul, Turkey

- 2000-2004 Research Assistant, Department of Electrical and Electronics Engineering, Nigde University

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RESEARCH INTERESTS

- Unmanned Systems (UAV, UGV)
- Multi Rotor Systems
- Nonlinear Control of Under-actuated Systems
- Variable Impedance Actuators (VIA)
- Multi-modal Biped Locomotion with VIA
- Robotics and Mechatronics Systems
- Bipeds and Mobile Robotics
- Brushed, Brushless Servo Motor Controller Design
- Real-time Control Applications

PROJECTS

- Title: FPGA Implementation of Laser Range Finder Based Simultaneous Localization and Mapping (SLAM) Algorithms for Multi-rotor Platforms
    - The Scientific & Technological Research Council of Turkey (TUBITAK)
    - Project No: 113E210
    - Period: 2013-2016
    - Budget: 95.500 US Dollar
- Title: Design and Navigation of Unmanned Ground Vehicles
    - State Planning Organization
    - Project No: 90198
    - Period: 2007-2008
    - Budget: 1 Million US Dollar
- Title: Development of Simultaneous Localization and Mapping Navigation Methods on Autonomous Multi Vehicles
    - The Scientific & Technological Research Council of Turkey (TUBITAK)
    - Project No: 107E007
    - Period: 2007-2009
    - Budget: 120.000 US Dollar

MEMBERSHIPS

- IEEE Since 2004

AWARDS

- TUBITAK (The Scientific and Technological Research Council of Turkey) Postgraduate scholarship, 2005-2009
- Travel grant of Istanbul Technical University to different international conferences

INTERNATIONAL COURSES TAKEN

- "Port-Hamiltonian Systems: from Geometric networked modeling to control", HYCON-EECI Graduate School on Control, Paris, France, April 2009.

PUBLICATIONS

International Journal Papers (SCI):

1. Görür, A., Karpuz, C., Yilmaz, A., Yalçin, K., "A Study on Resonance Characteristics of a Microstrip Open-Loop Resonator", Microwave and Optical Technology Letters, 177-180, (Nov 5 2001).

International Conference Papers:

1. Bayrakceken M.K., Yalcin, M. K., Arisoy, A., Karamancioglu, A., "HIL Simulation Setup For Attitude Control of A Quadrotor", IEEE International Conference on Mechatronics, 13 – 15 April 2011, Istanbul, TURKEY.
2. Yalcin, M. K., Darici, O., Temeltas, H., "A New Path Tracking Method for Quadruped Robots: Weingarten Map", 13th International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines (CLAWAR), 31 August - 3 September 2010, Nagoya, JAPAN.
3. Arisoy A., Ilarslan M., Kavruk S., Yalcin M.K., "The Experimental Setup for Altitude Control of a Quadrotor", 5. Ankara International Aerospace Conference, August 17-19, Ankara, Turkey, 2009.
4. Darici, O., Yalcin, M. K., Temeltas, H., "Comparison of gait generation methods in Quadruped Walking", IEEE/ASME International Conference on Advanced Intelligent Mechatronics, pp.1-6, July 2-5, Xian, China, 2008.

5. Yalçın, M. K., Yeşiloğlu, S. M., Temeltaş, H., "Extraction of Motion for 4-Wheel Drive, 4-Wheel Steer Mobile Robot with Reduced Order Hamiltonan Model", 7th IFAC Symposium on Nonlinear Control Systems, pp. 1186-1191, 21-24 August 2007, Pretoria, South Africa.

6. Yalçın, M.K., Yeşiloğlu, S.M., Dal, M., Temeltaş, H., "Maneuvering Strategies for Four-Wheel Drive, Four-Wheel Steer Mobile Robots Using Curvatures Based on Weingarten-Maps", The 32nd Annual Conference of the IEEE Industrial Electronics Society, 4148-4152, 2006 Paris

7. Yeşiloğlu, S.M., Yalçın, M.K., Temeltaş, H., "Model Reduction of a Four-Wheel Drive, Four-Wheel Steer Mobile Robot with Nonholonomic Constraints by Energy Based Approach", 3rd IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control, 191-196, Nogoya 2006

8. Uzam, M., Avci, M., Yalcin, M. K., "Digital Hardware Implementation of Petri Net Based Specifications: Direct Translation From Safe Automation Petri Nets to Circuit Elements", Proc. of The International Workshop on Descrete Event System Design, Desdes01, Pryztok Near Zielona Gora, Poland, 25-33, 2001.

9. Görür, A., Karpuz, C., Yalçın, K., Görür, H., "Bandstop Filter with a Wider Upper Passband Using Microstrip Open-Loop Resonator", Proceedings of Asia Pacific Microwave Conference, APMC2001, Tapei, Taiwan, 527-530, 2001.

10. Görür, A., Karpuz, C., Görür, H., Yalçın, K., "A Novel Double-Frequency-Tuned Photonic Bandgap (PBG) Structure", Proceedings of APMC2001, Tapei, Taiwan, 771-774, 2001.

11. Karpuz, C., Görür, H., Yalçın, K., Görür, A., "An Investigation on Resonance Characteristics of CPS Open-Loop Resonator", Proceedings of APMC2001, Tapei, Taiwan, 1104-1107, 2001.

12. Görür, A.,Karpuz C. ve Yalçın K., "A novel photonic bandgap (PBG) structure", 31st The European Microwave Conference, London, EuMC 20, 2001.

National Conference Papers: (in Turkish)

1. Sinekli, R., Budak, Ö.F., Yalçın, M.K., "ICP Algoritmasında Medyan Degerine Baglı Aykırı Nokta Bulmanın Parametrik İncelenmesi", TORK2014 Otonom Robotlar Konferansı, Ankara, 2014.

2. Sinekli, R., Budak, Ö.F., Yalçın, M.K., "Kinect Sensör ve ICP Algoritması Kullanarak Üç Boyutlu Nokta Bulutu Eşleştirme", TOK'2014 Otomatik Kontrol Ulusal

Toplantısı, İzmit, 2014.

3. Sarıyıldız, E., Yalçın, M. K., Temeltaş, H., "Vida Teoremi ve Dual Kuaterniyonlar Kullanılarak Endüstriyel Robotların Ters Kinematik Probleminin Çözülmesi", TOK'2012 Otomatik Kontrol Ulusal Toplantısı, Niğde, 2012.

4. Sarıyıldız, E., Uçak, K., Yalçın, M. K., Öke, G., Temeltaş, H., "7 Serbestlik Dereceli PA-10 Robotunun Ters Kinematik Probleminin Destek Vektör Makinesi Kullanılarak Çözülmesi", TOK'2012 Otomatik Kontrol Ulusal Toplantısı, Niğde, 2012.

5. Uluocak V., Kurşun A., Bostan O., Yalçın M. K., "Pnömatik Eyleyicili Tırmanan Mobil Robotlarda Yürüme Modeli Geliştirilmesi ve Kontrolü", TOK'2009 Otomatik Kontrol Ulusal Toplantısı, İstanbul, 2009.

6. Saraç, E., Karakaya, İ., Yalçın, M. K., Uzam M., "Uzaktan Kumanda Edilen Lamba Dimmer'inin Gerçekleştirilmesi", III. Ulusal Proje Aranıyor'03 Öğrenci Sempozyumu, 51-56, 2003.

7. Can, M., Yalçın, M. K., Uzam, M., "RF ile Uzaktan Kumandalı Otomatik Kapının Gerçeklenmesi", III. Ulusal Proje Aranıyor Öğrenci Sempozyumu, (57-62), 2003

FOREIGN LANGUAGE

- English (Good Level)
- Japanese, (JLPT N5)

COMPUTER SKILLS

- Application Programs
  - MATLAB, MATLAB/Simulink, MATLAB Real-time Windows Target, MATLAB xPCTarget, HI-TECH C Compiler (Microchip PIC12, PIC16, PIC18, dSPIC family), CCS C Compiler, Texas Instruments 32-bit MCU (TMS320F28335) Real-time Control with MATLAB/Simulink, Altium Designer, Eagle, Proteus, 20-sim
- Operating Systems
  - Windows(95,98,2000,ME,XP,7)
  - Linux (Ubuntu ,Ubuntu Real-time, OpenSUSE, Fedora, Pardus)
- Programming Languages
  - C, C++, MATLAB, Borland C++ Builder, Microsoft Visual Basic 6.0

CAD/CAM, PRODUCTION and SYSTEM SKILLS

- Prototype Printed Circuit Board with LPKF
- CAD (Part, Product, Sketcher, Wireframe and Surface)/CAM with Dassault CATIA V5R19
- Dassault SolidWorks (Part and Assembly)
- Unigraphics (UGS NX 6.0) beginner level
- MSC ADAMS motion analysis, co-simulation with MATLAB/Simulink
- CNC (DMU 50 evo linear) Machining
- Fast 3D prototyping with (Stratasys-FDM400MC Small)
- Fast 3D prototyping with (Stratasys-uPrint SE)
- Coordinate Measurement Machine (FARO Arm)
- Portable 3D Scanner (Creaform HandySCAN)
- KUKA KR Agilus Industrial Robot (KR 6 R900 sixx)
- Siemens PLC S7-200, S7-1200, S7-300

ACTIVITIES

- Sport Activities
  - Table Tennis (good level)
  - Wing-Tzun Kung Fu (Beginner and lifetime pursuer)