

MEHMET AYYILDIZ

İstanbul Bilgi University

Department of Mechatronics Engineering

Eski Silahtaraga Elektrik Santrali,

Kazim Karabekir Cad., No: 2/13,

Eyüpsultan, 34060, İstanbul, Turkey

+90 (212) 311 7789

+90 (212) 427 8270

mehmet.ayyildiz@bilgi.edu.tr

<http://www.mehmetayyildiz.com>

Experiences

Permanent Positions

10/2016 – Present **İstanbul Bilgi University**

İstanbul, Turkey Faculty Member, PhD

04/2019-Present - Department Head of the Mechatronics Engineering

04/2019-Present - Member of Faculty Board

10/2019-Present - Member of Faculty Executive Board

10/2017-10/2019 - Erasmus Coordinator of the Mechatronics Engineering

01/2016 – 06/2016 **EnginSoft Turkey**

İstanbul, Turkey Technical Manager

- Management of R&D projects: 3 TUBITAK 1507, 1 TUBITAK 1501 and 1 KOSGEB

- R&D Management of engineering projects in aerospace and defence, automotive and consumer goods industries

- Team Building and Management

- Supporting Software Sales

- Residence Engineer Activities

- Business Development

- Financial Administration and Planning EnginSoft Global Network Relationships

05/2015 – 01/2016 **General Electric**

Gezbe, Turkey Design Engineer

- Provide design ownership for assigned hardware including the engineering support of manufacturing and field issues as well as the technical interface with other functions.

- Provide engineering support for GE Aviation engine hardware.

- Conduct stress and life analyses in support of: engine certifications and qualifications, design optimization to meet life goals, failure investigations and test capability assessment of engine hardware.

- Effectively communicate and provide recommendations through the analysis, preparation and presentation of technical data to internal and external GE Aviation Engineering customers.

- Document technical data generated for the assigned projects and/or tasks consistent with engineering policies and procedures.

09/2009 – 03/2015 **Koç University**

İstanbul, Turkey Research and Teaching Assistant

- Worked on interdisciplinary research projects funded by national and international funding agencies.

- Prepared semi-annual progress and final reports of the projects.

- Published peer reviewed journal articles and conference papers.

- Mentored graduate and undergraduate students.

Visiting Positions

04/2018 – 05/2018 **Forschungszentrum Jülich**
Jülich, Germany Visiting Researcher

07/2011 – 08/2011 **Charité Universitätsmedizin**
Berlin, Germany Visiting Researcher

Education

09/2011 – 03/2015 **Koç University**
İstanbul, Turkey Ph.D. in Mechanical Engineering (GPA: 4.00/4.00)
Thesis: Effects of preservation solution and period on the mechanical and histological properties of liver
Advisor: Prof. Dr. Çağatay Başdoğan
Committee: Prof. Dr. Edoardo Mazza (ETH Zurich)
Prof. Dr. Ingolf Sack (Charité Universitätsmedizin Berlin)
Assoc. Prof. Dr. Demircan Canadınç (Koç University)
Assoc. Prof. Dr. Burak Güçlü (Boğaziçi University)
Assist. Prof. Dr. Evren Samur (Boğaziçi University)

09/2009 – 07/2011 **Koç University**
İstanbul, Turkey M.Sc. in Mechanical Engineering (GPA: 3.63/4.00)
Thesis: A novel opto-electro-mechanical tactile sensor for breast cancer imaging
Advisor: Prof. Dr. Çağatay Başdoğan
Committee: Assoc. Prof. Dr. Burak Güçlü (Boğaziçi University)
Assoc. Prof. Dr. Demircan Canadınç (Koç University)

09/2005 – 06/2009 **Selçuk University**
Konya, Turkey B.Sc. in Mechanical Engineering (GPA: 3.37/4.00)

Honors & Awards

- 2017 **İstanbul Bilgi University**
Teaching Excellence Award based on 2016-2017 Academic Year Spring Semester Course and Instructor Evaluation Survey (among top 10 instructors at the university)
- 2017 **İstanbul Bilgi University**
Teaching Excellence Award based on 2016-2017 Academic Year Fall Semester Course and Instructor Evaluation Survey (among top 10 instructors at the university)
- 2015 **Koç University**
Ranked 1st at the Graduate School of Sciences and Engineering (GPA: 4.00/4.00)
- 2011 – 2015 **Scientific and Technological Research Council of Turkey (TUBITAK)**
Scholarship for Ph.D. students - BİDEB 2211
- 2011 – 2015 **Koç University**
Full scholarship during Ph.D. studies
- 2010 – 2011 **Scientific and Technological Research Council of Turkey (TUBITAK)**
Scholarship for M.Sc. students - BİDEB 2210
- 2009 – 2011 **Koç University**
Full scholarship during M.Sc. studies
- 2009 **Selçuk University**
Ranked 2nd in the department (among ~120 students)

Project Experience

- 2015 – 2016 **Methodology for optimum design of ship silencers**
Grant: Scientific & Technological Research Council of Turkey, Project No: 7150328
Role: Project Manager, EnginSoft Turkey
- 2011 – 2014 **The effect of preservation time of the viscoelastic material properties of liver**
Grant: Scientific & Technological Research Council of Turkey, Project No: 110M649
Role: Research Assistant, Koç University
- 2013 – 2014 **Dynamic mechanical properties and long term deformation behaviour of viscous materials (MeProVisc)**
Grant: The European Metrology Research Programme (EMRP)
Role: Research Assistant, Koç University

Publications

Peer Reviewed Journal Articles

- J.07 O. Sirin, **M. Ayyildiz**, B. Persson, and C. Basdogan, "Electroadhesion with application to touchscreens," *Soft Matter*, vol 15, no. 8, pp. 1758-1775, Jan, 2019.
- J.06 **M. Ayyildiz**, M. Scaraggi, O. Sirin, C. Basdogan, and B. Persson, "Contact mechanics between the human finger and a touchscreen under electroadhesion," *Proceedings of the National Academy of Sciences*, vol. 115, no. 50, pp. 12668-12673, Nov, 2018.
- J.05 **M. Ayyildiz**, S. Cinoglu, C. Basdogan, "Effect of normal compression on the shear modulus of soft tissue in rheological measurements," *Journal of the Mechanical Behavior of Biomedical Materials*, vol. 49, pp. 235-243, Sep, 2015.
- J.04 **M. Ayyildiz**, R. G. Aktas, and C. Basdogan, "Effect of solution and post-mortem time on mechanical and histological properties of liver during cold preservation," *Biorheology*, vol. 51, no. 1, pp. 47-70, Jan, 2014.
- J.03 B. Yarpuzlu, **M. Ayyildiz**, O. E. Tok, R. G. Aktas, and C. Basdogan, "Correlation between the mechanical and histological properties of liver tissue," *Journal of the Mechanical Behavior of Biomedical Materials*, vol. 29, pp. 403-416, Jan, 2014.
- J.02 **M. Ayyildiz**, B. Guclu, M. Z. Yildiz, and C. Basdogan, "An optoelectromechanical tactile sensor for detection of breast lumps," *IEEE Transactions on Haptics*, vol. 6, no. 2, pp. 145-155, Apr-Jun, 2013.
- J.01 **M. Ayyildiz**, B. Yarpuzlu, and C. Basdogan, "Karaciğer dokusunun saklama zamanına ve solüsyonuna bağlı materyal özelliklerinin değişimi," *Sakarya University Journal of Science*, vol. 16, no. 3, pp. 259-267, Jun 2012.

Peer Reviewed Conference Proceedings

- P.04 O. Sirin, **M. Ayyildiz**, and C. Basdogan, "Effect of Finger Velocity on Frictional Forces Modulated by Electro vibration," *21th National Biomedical Engineering Meeting (BIYOMUT)*, Istanbul, Turkey, 2017.
- P.03 A. Sagdic, **M. Ayyildiz**, and C. Basdogan, "Haptic Perception of 2D Equilateral Geometric Shapes via Electro vibration on Touch Screen," *21th National Biomedical Engineering Meeting (BIYOMUT)*, Istanbul, Turkey, 2017.

- P.02 **M. Ayyildiz**, B. Yarpuzlu, and C. Basdogan, "Effect of preservation period on the material properties of liver," *17th National Biomedical Engineering Meeting (BIYOMUT)*, Istanbul, Turkey, 2012, pp. 19-25.
- P.01 **M. Ayyildiz**, B. Guclu, M. Z. Yildiz, and C. Basdogan, "A novel tactile sensor for detecting lumps in breast tissue," *EuroHaptics 2010 International Conference on Generating and Perceiving Tangible Sensations*, Part I, Amsterdam, Netherlands, 2010, pp. 367-372.

Peer Reviewed Conference Abstracts

- A.06 O. Sirin, **M. Ayyildiz**, and C. Basdogan, "Effect of Sliding Velocity on Frictional Forces Modulated by Electro vibration," *2017 World Haptics Conference, Munich, Germany*, 2017.
- A.05 A. Sadic, **M. Ayyildiz**, and C. Basdogan, "Haptic Perception of 2D Equilateral Geometric Shapes via Electro vibration on Touch Screens," *2017 World Haptics Conference, Munich, Germany*, 2017.
- A.04 E. Büyüktopçu, O. E. Tok, R. G. Aktas, B. Yarpuzlu, **M. Ayyildiz**, and C. Basdogan, "Organ nakilleri öncesi dokuların taşınma sürecinde UW ve Custodiol solüsyonlarında bekleyen karaciğer dokularında zamana bağlı ortaya çıkan değişikliklerin ince yapısal düzeyde incelenmesi," *21st National Electron Microscopy Congress, Mersin, Turkey*, 2013.
- A.03 **M. Ayyildiz**, B. Yarpuzlu, and C. Basdogan, "The changes in mechanical properties of liver tissue during the cold ischemic preservation," *5th International Conference on Mechanics of Biomaterials and Tissues (ICMOBT)*, Sitges, Spain, 2013.
- A.02 **M. Ayyildiz**, B. Yarpuzlu, and C. Basdogan, "Effect of preservation solution and period on rheological properties of liver," *19th Congress of the European Society of Biomechanics (ESB)*, Patras, Greece, 2013.
- A.01 **M. Ayyildiz**, B. Yarpuzlu, and C. Basdogan, "A novel soft tissue slicing apparatus for preparing rheological samples," *19th Congress of the European Society of Biomechanics (ESB)*, Patras, Greece, 2013.

Workshops, Demonstrations and Seminars

- W.05 **M. Ayyildiz**, "Biomechanical characterization and modeling of liver tissue," *İstanbul Neuroprosthetics Workshop, Boğaziçi University, İstanbul, Turkey*, 2017.
- W.04 **M. Ayyildiz**, "From mechanical properties to evaluation of transplant organs and detection of diseases: towards a mechanics based histology of soft tissue," *presented at İstanbul Bilgi University, İstanbul, Turkey*, 2016.
- W.03 **M. Ayyildiz**, "Soft Tissue Biomechanics," *presented at İstanbul Medipol University, İstanbul, Turkey*, 2016.
- W.02 S. Cinoglu, **M. Ayyildiz**, C. Basdogan, "Rheological experiments for the characterization of dynamic mechanical properties and long term deformation behaviour of viscous materials," *presented at MeProVisc Workshop - The Istituto Nazionale di Ricerca Metrologica (INRIM)*, Torino, Italy, 2014.
- W.01 **M. Ayyildiz**, B. Guclu, M. Z. Yildiz, and C. Basdogan, "A Tactile Sensor for Detecting Lumps in Breast Tissue," *demonstrated at World Haptics Conference 2011, İstanbul, Turkey*, 2011.

Theses

- T.02 **M. Ayyildiz**, Effect of Preservation Solution and Period on the Mechanical and Histological Properties of Liver, Ph.D. Thesis, *Department of Mechanical Engineering, Koç University*, March 2015.

T.01 **M. Ayyildiz**, A novel opto-electro-mechanical tactile sensor for breast cancer imaging, M.Sc. Thesis, *Department of Mechanical Engineering, Koç University*, July 2011.

Professional Activities

Reviewer for Journals

Cardiovascular Engineering and Technology
Computer Methods in Biomechanics and Biomedical Engineering
Frontiers in Mechanical Engineering
International Journal of Computer Assisted Radiology and Surgery
Journal of the Mechanical Behavior of Biomedical Materials
Journal of Biomechanics
Medical Engineering & Physics
IEEE Transactions on Haptics
IEEE Transactions on Mechatronics
IEEE Sensors

Reviewer for Conferences

Worldhaptics
Eurohaptics
Haptics Symposium
International Conference on Biomedical Engineering and Biotechnology
International Conference on Information Processing in Computer-Assisted Interventions
ToRK

Member

European Society of Biomechanics
Technical Committee on Haptics

Other Activities

Managing Facebook and LinkedIn accounts for IEEE Transactions on Haptics

Teaching

İstanbul Bilgi University

2020 - 2021 CMPE 132 - Programming II
2016 - 2020 MECA 205 - Materials Science for Engineers
2017 - 2018 MECA 211 - Engineering Mechanics
2016 - 2021 MECA 241 - Computer Tools for Mechatronics Engineers
2016 - 2021 MECA 321 - Mechanics of Materials
2016 - 2021 MECA 332 - Mechatronics Components Design
2018 - 2019 MECA 402 - Introduction to Biomechatronics

Skills

Language

English (TOEFL IBT - 2009: 98), German (Goethe Institut: C1), Turkish (Native)

Computer Aided Design

Siemens NX, Teamcenter, SolidWorks, Eagle

Computer Aided Engineering and Analysis

ANSYS Mechanical, MSC Adams, LabVIEW, Proteus ISIS & ARES, Minitab, SPSS

Programming

MATLAB/Simulink, Python/NumPy/SciPy/Pandas/Matplotlib, C/C++, Wolfram Mathematica

IDE

Visual Studio, Visual Studio Code, Jupyter Notebook

Personal

Information

Born Razgrad, Bulgaria - February 2, 1986

Nationality Bulgarian (EU) & Turkish - **Eligible for Employment in EU**

Military Status Paid Military Service (16.12.2014)

Driving License Class B (03.10.2013)

Skype mehmet-ayyildiz