CV of Ahmet Turkmen, PhD

Associate Professor, Engineering and Technology Department
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Objective: To work in an environment that is interested in advancing and disseminating scientific discovery, promoting integrative education, and encouraging interdisciplinary collaborations.
Personal Summary: Dedicated, enthusiastic individual with outstanding academic, communication, organizational, and people skills and a passion for teaching and staying current in technical skills and scientific knowledge

Teaching and Research Interests

- **Analog and Digital Electronics, Circuit Analysis, Digital Design, Signals and Systems, Digital Signal Processing, Electromagnetics**
- **Biomedical Instrumentation, Biomedical Signal Processing, Physiological Modeling, Clinical Engineering, Medical Imaging, Medical Device Design, Capstone Design**
- **Automatic Control Systems, Electric Motors and Generators, Power System Analysis, Robotics**
- **Computer Networks**
- **Engineering Education, Active Learning, Signature Pedagogies, Flipped Classroom, Online Teaching, Educational Administration, Accreditation**

Education

- **MS in Biomedical Engineering (May 2007)**
  University of Connecticut,
  MS Thesis:" A Simulator for Perfusion Training"
- **Ph.D. in Electrical and Electronics Engineering (2000)**
  Middle East Technical University, Ankara/Turkey,
  Ph.D. Thesis: "Development of Methods for Noninvasive Assessment of Cardiovascular System Using Korotkoff Sounds"
- **MS in Electrical and Electronics Engineering (1989)**
  Middle East Technical University, Ankara/Turkey
- **BS in Electrical and Electronics Engineering (1986)**
  Middle East Technical University, Ankara/Turkey

Courses Taught

2018 -2019 UW – Stout

- CEE 205 Circuit Analysis and Design (Fall and Spring)
- CEE 225 Digital Logic
- CEE 235 Signals and Systems
- CEE 355 Applied Electromagnetics
- CEE 435 Digital Signal Processing
- ETECH 310 Biomedical Instrumentation

2017 -2018 UW – Stout

- ENGR 290 Circuits and Devices

- ETECH 260 Introduction to Fluid Power
- ET 382 Electronics Communications
- CEE 215 Electronics
- ET 204 Fundamentals of Electricity and Electronics (2 sections)
- ETECH 100 Impacts of Engineering Lab (2 sections)

2016 -2017 UW – Stout

- CEE 205 Circuit Analysis and Design
- CEE 215 Electronics
- CEE 355 Applied Electromagnetics
- CEE 335 Automatic Control Systems
- CEE-425 Data Communications and Computer Networks
- CEE 405 Capstone I: Computer Engineering Design
- CEE 410 Capstone I: Computer Engineering Design
- CEE 425 Data Communications and Computer Networks
- ET 405 Capstone I: Design Practicum

2014 -2016 Meliksah University, Turkey

- EEE 101 Orientation to Electrical & Electronics Engineering
- EEE 304 Electric Machinery-I
- EEE 308 Energy Distribution
- EEE 322 Power Generation and Transmission
- EEE 401 Graduation Project-I
- EEE 402 Graduation Project-II
- EEE 406 Digital Signal Processing
- EEE 409 Introduction to Biomedical Engineering
- EEE 411 Power System Analysis
- ECE 500 Master's Thesis
- ECE 521 Advanced Power System Analysis

UW – Stout 2007 - 2014

- CEE 225 Digital Logic
- CEE 235 Signals and Systems
- CEE- 335 Automatic Control Systems
- CEE 405, CEE 406 Computer Engineering Senior Design Project – I & II
- CEE 435 Digital Signal Processing
- CEE 410 Computer Engineering Senior Design Project - II
- ELEC 204 Fundamentals of Electricity and Electronics
- ELEC 260 Electrical Circuits
- ELEC 271 Digital Logic and Switching
- ELEC 310 Biomedical Instrumentation
- ELEC 340 Motors and Generators
- ELEC 382 Electronic Communications
- ELEC 405 Capstone Design Project

Courses Taught at Other Universities:

- Analog Electronics,
- Biomedical Signal Processing,

- Biomedical Instrumentation,
- Signals and Systems,
- Mathematical Physiology,
- Digital Logic Design,
- Management of Medical Technology,
- Electromagnetics,
- Introduction to Biomedical Engineering,
- Biomedical Equipment Technology,
- Medical Imaging Technology

Memberships

- **ASEE:** American Society for Engineering Education
- **IEEE –EMBS (**Institute of Electrical and Electronics Engineers – Engineering in Medicine and Biology Society)
- **IEEE Education**
- **IEEE Power and Energy Society**
- **IEEE Power Electronics Society**
- **IEEE Instrumentation and Measurement Society** Membership
- **AAMI:** Association for the Advancement of Medical Instrumentation

Work Experience

08/2018 - …	**Associate Professor,** University of Wisconsin at Stout, Engineering, and Technology Department
08/2016 -07/2018	**Lecturer,** University of Wisconsin at Stout, Engineering, and Technology Department
12/2014- 06/2016	**Associate Professor, Assistant Dean,** Electrical and Electronics Engineering Department, Melikşah University, Kayseri/Turkey
08/2014 -07/2015	**Visiting Scholar**, Electrical and Electronics Engineering Department, Abdullah Gul University, Kayseri/Turkey
08/2011 – 12/2015	**Associate Professor,** University of Wisconsin at Stout, Engineering, and Technology Department
08/2007 – 07/2011	**Assistant Professor,** University of Wisconsin at Stout, Engineering, and Technology Department
08/2005 - 05/ 2007	**Clinical Engineering Intern**, University of Connecticut Health Center Farmington/Connecticut USA
04/2004 - 11/2004	**Biomedical Engineer,** Soma Technology, Inc. Cheshire/Connecticut USA
01/2004 - 04/2004	**Part time instructor**, Mech. Eng. Department., Baker College, Flint/MI
01/2003-04/2004	**Researcher,** Electrical Engineering Department, Michigan State University East Lansing/USA
01/2002- 05/2002	**Visiting Assistant Professor**, Biomedical Engineering Department, Michigan Technological University, Houghton/Michigan USA
2000 - 2003	**Assistant Professor,** Başkent University Ankara/Turkey, Biomedical Eng. Dept.

1994 - 2000	**Assistant Director and Instructor,** Başkent University Ankara/Turkey, , Vocational School of Technology
1989 - 1994 :	**Instructor,** Mersin University – Vocational School
1988 - 1989 :	**Electrical - Electronics Engineer,** TUBITAK (Turkish Scientific and Technical Research Council), Electronics Research Center,
1986 - 1988	**Electrical Engineer**, STFA – Enercom Inc.

Commencement of New Degree Programs including Lab, Course and Curriculum Development

1994 - 1996	Biomedical Equipment Technology Associate Degree Program Baskent University Ankara/Turkey
1998 -2000	Biomedical Engineering Undergraduate Program (The first Undergraduate Biomedical Engineering program in Turkey) Baskent University Ankara/Turkey
2008- 2010	Computer Engineering, University of Wisconsin – Stout
2009 - 2010	Biomedical Instrumentation Minor, University of Wisconsin – Stout
2017 - 2018	Electrical Engineering, University of Wisconsin – Stout

Honors, Awards, Donations

2016	Equipment donations from Melfoster Company (http://www.melfoster.com) for Senior Design Projects at UW – Stout ($1,644)
2016	Equipment donations from Rockwell Automation for Control Lab at UW – Stout ($2,000)
2015	Donation from Texas Instruments- the DSP+ARM 9 Development kits (5 units) and 14 PIN JTAG Emulator (5 units) Total value to Meliksah University $1370.
2013	Fellowship for Scientists on Sabbatical Leave from Turkish Scientific and Technical Council (TUBITAK). Total value $37,000.
2013	Donation from Texas Instruments- the DSP+ARM 9 Development kits (10 units) and 14 PIN JTAG Emulator (10 units) to UW – Stout Total value: $2740.
2012	The best paper presented award at ASEE North Midwest Section Meeting, St. Cloud MN, October 5, 2012", $500.
2010	Donation of Electronic Components and Test Instruments from Medtronic Inc, $1400
2009	Donation from Xilinx Corporation for Digital Design and DSP Software, approximate value = $ 5,000
2009	Donation from Altera Corporation for a DE2 Development and Education Board for use in the Computer Engineering Program; valued at $495.
2009	University of Wisconsin System Grant, Writing an NSF grant proposal for Renovation of Computer Systems Research Labs for Computer Engineering (CE) and Engineering Technology (ET) Programs at University of Wisconsin –Stout, $16,506
2008	University of Wisconsin Woman and Science Program Grant – "Effective Usage of Graphic Calculators in ELEC 204 Course", $ 1,000.
2008	University of Wisconsin – Stout Faculty Research Initiative Grant, Proposal Writing Cohort Group Program, $1,000.
2008	University of Wisconsin – Stout Just in Time Grant to attended ICEEE 2008 International Conference on Engineering Education-New Challenges in Engineering Education and Research in the 21st Century" in Hungary on July 27-31, $750.
2005- 2007	Full tuition and stipend during Master's study in Biomedical Engineering at University of Connecticut (approximately $37, 000)

Publications

Journal Papers

1. Turkmen A, Pantiskas C, *Management of ECG Cables and Leadwires* in Biomedical Instrumentation and Technology Journal, Vol.45, No.2, March/April 2011.
2. Turkmen A, Rosinski D, Noyes N, *A Simulator for Perfusion Training*, Perfusion, Vol. 22 ,No.6, p. 397 – 400, November 2007.
3. Turkmen A, İder YZ, *Model Based Analysis of the Variation in Korotkoff Sound Onset Time during Exercise*, Physiological Measurements Journal, pp.433-445, August 2001.

AAMI Standards written or revised while I co-chaired

1. ANSI/AAMI EC57:2012: Testing and Reporting Performance Results of Cardiac Rhythm and ST Segment Measurement Algorithms (Revision of ANSI/AAMI EC57:1998/(R)2008)
2. ANSI/AAMI/IEC 60601-2-25:2011: Medical Electrical Equipment - Part 2-25: Particular Requirements for the Basic Safety and Essential Performance of Electrocardiographs
3. ANSI/AAMI/IEC 60601-2-27:2011: Medical electrical equipment— Part 2-27: Particular Requirements for the Basic Safety and Essential Performance of Electrocardiographic Monitoring Equipment
4. TER 1589: Technical Report on Common Mode Rejection on ECG Monitoring
5. AAMI/FDIS EC53: ECG Trunk Cables and Patient Leadwires

Peer Reviewed Conference Presentations/Papers:

1. Finta M, Gerads P, Peng AS, Turkmen *A, Design of a Ground Sampling Distance Graphical User Interface for an Unmanned Aerial Vehicle System*, **accepted to** Conference on Information Sciences and Systems (CISS 2019), Baltimore, MD, March 20-22-2019.
2. Dassow B, Bauer D, Mills L, Zimmer M, Batzler R, Turkmen A, Peng AS, *Development of a Home Energy Monitoring System A Capstone Project Experience*, **accepted to** IEEE Power and Energy Conference at Illinois (PECI), Urbana – Champaign, IL, February 28 - March 1, 2019
3. *Velasquez MA, Yang B, Belmont B, Peng AS, Turkmen A, Baltaci K, Zhan L, Design and Development of a Food Scale for Use of Diabetic Patients*, IEEE International Conference on Electro Information Technology (eit2017), Lincoln, Nebraska, May 14-17, 2017
4. Peng AS, Nelson R, Liu C, Turkmen A, Shi W, Lin J-L, *Design and Development of a Hybrid Instructional Model for a Computer Engineering Course*, ASEE North Midwest Section Meeting on October 17-18, 2013.
5. A. Turkmen, C. Liu, W. Shi, R. Nelson, J. Bumblis, D. Olson, *Technical and Pedagogical Issues with Embedded System Engineering Education ,* ASEE North Midwest Section Meeting, St. Cloud MN, October 5, 2012,
6. W. Shi, A. Turkmen, C. Liu, R. Nelson, J. Bumblis, D. Olson, *Project-Based & Active Learning in Computer Engineering Education,* ASEE North Midwest Section Meeting, St. Cloud MN, October 5, 2012,
7. Breen J, Turkmen A, *Fourier Workbench Software,* ASEE North Midwest Section Meeting, Duluth MN, October 13-15,2011,
8. R. Nelson, J. Bumblis, C. Liu, A. Turkmen, N. Zhou, D. Olson and R. Rothaupt, What is Involved in Establishing a New Engineering Program? An Update on the New Computer Engineering Program at UW-Stout, ASEE North Midwest Section Meeting, Duluth, MN October 13-15, 2011

9. Turkmen A, *Effective Usage of Graphing Calculators in Electrical Engineering Technology Courses,* ASEE North Midwest Conference, Milwaukee, WI, October 8-10, 2009
10. Turkmen A, Noyes N, Rosinski D, Enderle J, Northrop R, *A Simulator for perfusion Training,* Bioengineering Conference, SUNY, NY, 10-11March 2007,
11. Turkmen A, Ider YZ, Sade E, Aytemir K, Oto A, Kuçukdeveci F*, Relation Between Heart Rate Turbulence and Heart Rate Variability Spectral Components,* 23rd IEEE EMBS International Conference, Istanbul/Turkey, 25-28 August 2001
12. Yıldız M, Güler FN, Türkmen A, Yılmaz D, *Biopotential Instrumentation Set, 23rd IEEE EMBS International Conference,* Istanbul/Turkey, 25-28 August 2001,
13. Ardam H, Coskun I, Türkmen A, *Fuzzy Control of PWM Inverter*, ACEMP 2001, Kusadası-Turkey, 27-29 June 2001
14. Turkmen A, İder YZ, *Study of the Effects of Cardiovascular Parameters on QKD Using An Electrical Equivalent Model*, Isık 2000 Workshop on Biomedical Information Engineering Istanbul/Turkey, June 25-27,2000,

Book Reviews for Biomedical Instrumentation and Technology Journal

1. Review for the book *Numerical and Statistical Methods for Bioengineering, Michael R. King and Nipa A. Mody, Cambridge University Press,* Vol. 46, No. 2, March/April 2012: p.149
2. Review for the book *Clinical Procedures for Technology Specialists* by Laurance J. Street*,* Volume 45, Issue 6 Nov./Dec. 2011, p.492

Capstone Design Projects Supervised at UW – Stout Fall 2016:

1. Home Automation, Wesley Ericson, Garrett Vogl, Michelle Miller, CEE, Abigail Peterson
2. Refrigerated Trailer/Cold Chain, David Detlaff and Nick Gauvin, - *Sponsored by Mel Foster Martin Miller at Mal Foster Company,*
3. Power System Monitoring Project, Lane Mills, Brian Dassow, Benjamin Roth, Mitch Zimmer, Robert Batzler, Devon Bauer - *Sponsored by Mel Foster Martin Miller at Mal Foster Company*
4. Cold Chamber Monitor, Mitchell John Dulon, Joshua Radle, Smith Taylor, Zong Xiong - *Sponsored by Mel Foster Martin Miller at Mal Foster Company*
5. Motion Based Message Conveyor for Safety Case, Mohammed Saleh Almalki Sr, Abdulateef Faduallah, Amer Aldehami
6. Monitoring Thermometer, Alhisan Sr. Munthir Fahad Sr
7. Smart Robot, Feras Tariq Ghandurah

Electrical Engineering Senior Design Projects Supervsed at Meliksah University

1. Mehmet Angın, Oğuzhan Taştan, Induction Heating
2. Abdinasir Abubakir, Mustafa, Mohammed Muse Ali, Rassul Baktygul, Automatic Power Factor Correction
3. Cem Akpınar, Board Eraser
4. Cem Akpınar, Fruit Screen Device
5. Burak Soysal, Sergen Boyraz, UPS Design

Computer Engineering Senior Design Projects Supervised at University of Wisconsin – Stout (2004-2007)

1) Josh Geenen, Jesse Schallenberger, *Display Module User Interface for Medical Devices,* 2011-2012
2) Ben Wolf, Ryan Schuh, Curtis Drohman, Steven Volbrecht, *Brain Computer Interface to Control RC Car,*2012-2013
3) Nick Werner, Josh Geenen, *Vibetech Java GUI – Program to Interpretive Data for Vibetech,* 2012-2013
4) Taylor Roehr , Ashish Singh, *Walk with You Navigation System,* 2012-2013

Engineering Technology Capstone Design Projects Supervised at University of Wisconsin – Stout:

1) Ryan A. Bailey, Electronic Guitar Tuner, 2009
2) Shahilaja Kanagarajah, Detection of Sudden Large Changes in Blood Pressure, 2009
3) Sarath Kong, Joe Balsimo, Jonathan Kelly, Data Acquisition and Processing for Medical Device Design and Prototype Development, 2010-2011
4) Scott Mitchell, RF ON/OFF Switch, Fall 2011
5) Brock Luttenegger, Nintendo Entertainment System Controller, Fall 2011
6) Robert Roth and Joe Leahy, Solar Panel to Run Lights on the Board, Fall 2011
7) Talon Gross, Ryan Meger, Mitch Podhora, Aaron Albrecht, Charge Controller for a Solar Panel, Fall 2011
8) Alex Guzman, A Modulatable Constant Current Driver, Fall 2011
9) LeeAnn Whipple, Temperature Monitoring with Arduino, Spring 2012

Samsung Grant Project Submitted (rejected):

"C2F: Cardio Cloud Framework for Individual and Region-based Rapid Heart - Health Monitoring, Analysis, and Abnormality Prediction" 2016 Samsung GRO Program with Dr. Faruk Çağlar

TÜBİTAK 2209A Undergraduate Research Grants Submitted by Students at Meliksah University (rejected):

1. 3D laser Scannner and Extending Usage of It for Medical Applications, Student: Muhammet Bağ
2. Remote Control of A Solar Panel, Student: Furkan Balcı
3. Modular Control Panel for Generators, Student: Oğuzhan Elaltuntaş
4. Monitorization and Control of Intensive Care Unit Instruments, Student: Gülnaz Yükselen
5. Software for Control of Drones, Student: Hacı Kadir KESKİNKILIÇ
6. Railway Automation System, Emre ALP

Budget of Each Project is approximately 650 dollars

Other Activities

- Assistant Dean of School of Engineering and Architecture at Meliksah University December 2014 – June 2016
- Participated in ABET Accreditation Process for Computer Engineering at University of Wisconsin – Stout:
  Self-Study Report: http://www.uwstout.edu/admin/provost/upload/Computer-Engineering-Self-Study-2012-13.pdf
- Participated in Training for Accreditation of Engineering Programs at Meliksah University
- Member of Medical and Scientific Advisory Team of Vibetech, Inc, a medical device development company since 2002.
- Consultant and shareholder with TRIOMI Inc. (Triomi.com): Startup Medical Device Company, product under development: Portable 12-lead EKG device

- Faculty Advisor for UW - Stout IEEE student branch
- Faculty Advisor for Meliksah University IEEE student branch
- Reviewer for National Science Foundation (NSF) Biomedical Engineering panel
- Reviewer for ASEE Annual Conference
- Reviewer for Biomedical instrumentation and Technology Journal
- Reviewer for Turkish Journal of Electrical Engineering and Computer Science
- Reviewer for IEEE Instrumentation and Measurement Society Conferences
- Member of Technical Program committee for Second International Symposium on Intelligent Systems Technologies and Applications (ISTA' 16), September 21-24, 2016 Jaipur, India
- Member of University of Wisconsin – Stout Curriculum and Instruction Committee (CIC)
- Reviewer for Fountain Magazine
- Member of Technical Program committee for International Conference, 'RDCAPE 2017' to be held in Amity University Uttar Pradesh, India
- Member of AAMI (Association for the Advancement of Medical Instrumentation) Standards Committee, Currently serving on the following committees:
    I. AAMI/AP, Apnea Monitoring Committee
    II. AAMI/EC/WG 01, Ambulatory Electrocardiograph WG (Working Group)
    III. AAMI/EC/WG 02 Arrhythmia Monitoring WG
    IV. AAMI/EC/WG 03 Cables and Leads WG
    V. AAMI/EC/WG 04, Cardiac monitor and diagnostic ECG WG
    VI. AAMI/EC/WG 06 ECG Electrode WG
    VII. AAMI/EC/WG 07, Signal averaging WG
    VIII. AAMI/EC/WG 08 Standard Communications Protocol WG
- Co-chair for AAMI Apnea Monitoring Committee and ECG Committee March 2010 – June 2014.
- Invited Proposal Review Panelist, Division of Biomedical Engineering (several times in 2008 - 2012), National Science Foundation, Arlington, VA