M. Cenk ÇAVUŞOĞLU, Ph.D.

Nord Professor of Engineering,
Department of Electrical, Computer, and Systems Engineering,
(Secondary Appointments in Department of Biomedical Engineering, Department of Mechanical and Aerospace Engineering, and Department of Computer and Data Sciences)
Case Western Reserve University,
10900 Euclid Ave., 517C Glennan Building, Cleveland, OH 44106-7221

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Research Interests

Robotics, Human-Machine Interfaces, and Systems/Control Theory, *with emphasis on:*
Medical Robotics, Haptics, Virtual Environments, Surgical Simulation, and Modeling and Simulation of Biological Systems.

Education

Ph.D.	1997-2000	**University of California, Berkeley**, Electrical Engineering and Computer Sciences	
		Thesis:	"Telesurgery and Surgical Simulation: Design, Modeling, and Evaluation of Haptic Interfaces to Real and Virtual Surgical Environments"
		Advisor:	S. Shankar Sastry, Frank Tendick (co-advisor)
M.S.	1995-1997	**University of California, Berkeley**, Electrical Engineering and Computer Sciences	
		Title:	"Control of a Telesurgical Workstation"
		Advisor:	S. Shankar Sastry
B.S.	1991-1995	**Middle East Technical University, Ankara, Turkey**, Electrical and Electronic Engineering	

Professional Experience

July 2018-Current	Nord Professor of Engineering Case Western Reserve University, Cleveland, OH
July 2019-Current	Professor (Tenured), Electrical, Computer, and Systems Engineering Secondary appointment in Biomedical Engineering Secondary appointment in Mechanical and Aerospace Engineering Secondary appointment in Computer and Data Sciences (July 2021) Case Western Reserve University, Cleveland, OH
July 2013-June 2019	Professor (Tenured), Electrical Engineering and Computer Science Secondary appointment in Biomedical Engineering Secondary appointment in Mechanical and Aerospace Engineering Case Western Reserve University, Cleveland, OH
August 2017-January 2019	Associate Chair, Department of Electrical Engineering and Computer Science Case Western Reserve University, Cleveland, OH

July 2008-June 2013	Associate Professor (Tenured), Electrical Engineering and Computer Science Case Western Reserve University, Cleveland, OH
September 2009-May 2010	Visiting Associate Professor, Electrical and Electronic Engineering Bilkent University, Ankara, Turkey
August 2002-June 2008	Assistant Professor (Tenure-track), Electrical Engineering and Computer Sci. Case Western Reserve University, Cleveland, OH
December 2000-August 2002	Research Specialist, Electrical Engineering and Computer Sciences University of California, Berkeley
January 2001-May 2001	Lecturer, Electrical Engineering and Computer Sciences University of California, Berkeley
August 2000-December 2000	Visiting Postdoctoral Researcher, Electrical Engineering and Computer Sci. University of California, Berkeley
May 1996-August 2000	Research Assistant, Electrical Engineering and Computer Sciences University of California, Berkeley
Summer 1998	Visiting Scholar SHARP group, INRIA Rhône-Alpes Research Center, France

Honors and Awards

2024	CWRU Innovation Week Commercialization Award
2018	Appointed as **Nord Professor of Engineering** at Case Western Reserve University
2018	**Invited Semi-Plenary Speaker** at the International Symposium on Medical Robotics (ISMR 2018)
2018	**Invited Plenary Speaker** at the 2018 Turkish Robotics Science Conference (ToRK 2018)
2017	Elected to the **College of Fellows** of the American Institute of Medical and Biological Engineering (AIMBE), Class of 2017
2017	Googol **Best New Application Paper Award** of the IEEE Transactions on Automation Science and Engineering
2016	Appointed as a **Standing Member** of Bioengineering, Technology, and Surgical Sciences (BTSS) Study Section, Center for Scientific Review, National Institutes of Health (Term: 2016-2020)
2016	**Invited Featured Speaker** at the Design of Medical Devices Conference (DMD 2016)
2014	**Keynote Speaker**, 2014 IEEE/RSJ Intelligent Robots and Systems Conference (IROS 2014)
2013	Mihajlo "Mike" Mesarovic Award for Extraordinary Impact in the Department of Electrical Engineering and Computer Science, CWRU
2013	Finalist for the **Best Medical Robotics Paper Award** at the IEEE International Conference on Robotics and Automation (ICRA 2013)
2009	Marie Curie Fellow, European Commission 7th Framework Programme
2006	Elevated to the grade of Senior Member of the Institute of Electrical and Electronic Engineers (Nominated by the IEEE Engineering in Medicine and Biology Society)
2005	Finalist for the **Best Paper Award** at the 12th International Conference on Advanced Robotics (ICAR 2005)
2004	Candidate for Haydrocephalus **Award** at the 33rd Annual Meeting of the AANS/CNS Section on Pediatric Neurological Surgery
2000	Joseph H. Engelberger **Best Paper Award** at the 4th Biannual World Automation Congress (WAC 2000).

1995	Ranked second in the university and first in the School of Engineering and the Department of Electrical and Electronic Engineering graduating class of 1995, Middle East Technical University (METU).
1991-1995	Bülent Kerim Altay Award for excellent academic achievement in the Department of Electrical and Electronic Engineering, METU
1991-1995	Undergraduate fellowship from Turkish Scientific and Technical Research Council (TÜBİTAK)
1991-1995	Undergraduate fellowship from Hacı Ömer Sabancı Foundation (VAKSA)
1991	Ranked 11th in the nation among over 1 million students in the Turkish national university entrance examination (ÖYS-1991)

Professional Memberships

American Institute of Medical and Biological Engineering (AIMBE) – Fellow
Institute of Electrical and Electronic Engineers (IEEE) – Senior Member
IEEE Robotics and Automation Society (RAS)
IEEE Engineering in Medicine and Biology Society (EMBS)
IEEE RAS Technical Committee on Telerobotics (**Co-chair** between 2010-2012, **Chair** between 2012-2013)
IEEE RAS Technical Committee on Surgical Robotics
IEEE RAS Technical Committee on Haptics

Research Grant and Contract Support

Current

07/2022-06/2026	"Magnetic Resonance Imaging Guided Robotic Catheter System for Left Atrial Appendage Occlusion Procedures" NIH NHLBI (R01 HL163991) Total Amount: $3,686,129 Percent: 33% (**Principal Investigator**) MPI's: Çavuşoğlu, Griswold (CWRU), Seiberlich (Univ. of Michigan), Bezerra (Univ. of South Florida); Co-I: Piktel (CWRU)
10/2021-09/2026	"FW-HTF-R: Impact of Artificial Intelligence Aids on Clinical Skill Acquisition, Atrophy and Adaptation" NSF SES-2129072 Total Amount: $1,999,999 Percent: 25% (co- Principal Investigator) PI: Ray (CWRU), Co-PI's: Çavuşoğlu, Macnamara, Wilson-Delfosse (CWRU), Krupinski (Emory)

Pending

04/2026-03/2030	"Low-Field Magnetic Resonance Imaging Guided Robotic Catheter System for Ventricular Tachycardia Ablation" NIH NHLBI Total Amount: $3,152,266 Percent: 33% (**Principal Investigator**) MPI's: Çavuşoğlu, Herzka, Griswold (CWRU); Co-I: Sharma, Piktel (CWRU)

Completed

07/2020-06/2025 "Real-Time MRI Guided Robotic Catheter System for Atrial Fibrillation Ablation"
NIH NHLBI (R01 HL153034)
Total Amount: $2,729,052
Percent: 33% (**Principal Investigator**)
MPI's: Çavuşoğlu, Griswold (CWRU), Seiberlich (Univ. of Michigan) Co-I's: Lederman, Campbell (NHLBI), Arruda, Bezerra, Rajagopalan (UH/CWRU)

08/2016-07/2025 "RI: Medium: Active Sensing, Localization, and Mapping in Dynamic Deformable Environments for Image-Guided Interventions"
NSF CISE IIS-1563805
Total Amount: $1,056,000
Percent: 50% (**Principal Investigator**)
PI: Çavuşoğlu, Co-PI's: Griswold, Seiberlich (CWRU), Branicky (Univ. of Kansas)

01/2020-12/2022 "FW-HTF-P: Clinical Skill Acquisition, Retention and Atrophy with Artificial Intelligence Aids"
NSF DUE-1928485
Total Amount: $150,000
Percent: 33% (co- Principal Investigator)
PI: Ray (CWRU), Co-PI's: Cavusoglu, Macnamara (CWRU)

07/2015-06/2021 "NRI: Collaborative Research: Human-Supervised Manipulation of Deformable Objects"
NSF CISE IIS-1524363
Total Amount: $469,191 (Multi-Institutional Total: $744,500)
Percent: 100% (**Principal Investigator**)
PI's: Çavuşoğlu, Berenson (Univ. of Michigan)

06/2017-05/2021 "PFI:AIR-TT: Magnetic Resonance Imaging Guided Robotic Cardiac Catheter System"
NSF ENG IIP-1700839
Total Amount: $247,870
Percent: 50% (**Principal Investigator**)
PI: Çavuşoğlu, Co-PI's: Gurkan-Cavusoglu (CWRU)

08/2013-07/2018 "NRI: Small: Magnetic Resonance Imaging Guided Co-Robotic Active Catheter System"
NIH NIBIB (R01 EB018108-01)
Total Amount: $1,331,544
Percent: 50% (**Principal Investigator**)
PI: Çavuşoğlu, Co-PI's: Griswold, Seiberlich (CWRU), Ustin (Cleveland Clinic)

09/2015-02/2017 "I-Corps Teams: Magnetic Resonance Imaging Guided Active Robotic Catheter"
NSF ENG IIP-1557988
Total Amount: $50,000
Percent: 100% (**Principal Investigator**)
PI: Çavuşoğlu

09/2010-12/2015 "CPS:Small: A Framework for Validation and Monitoring of Robotic Surgery Systems"
NSF CISE CNS-1035602
Total Amount: $688,000

Percent: 33% (**Principal Investigator**)
PI: Çavuşoğlu, Co-PI's: Podgurski, Ray (CWRU)

08/2009-07/2013 "RI:Medium: Robust Intelligent Manipulation and Apprenticeship Learning for Robotic Surgical Assistants"
NSF CISE IIS-0905344
Total Amount: $1,359,881
Percent: 25% (**Principal Investigator**)
PI: Çavuşoğlu, Co-PI's: Newman (CWRU), Goldberg, Abbeel (UC Berkeley), Alterovitz (UNC Chapel Hill)

04/2010-03/2013 "Development of Robotic Tools for Totally Endoscopic Off-Pump Coronary Artery Bypass Graft Surgery"
NIH NHLBI (R21 HL096941-01A1)
Total Amount: $431,750
Percent: 75% (**Principal Investigator**)
PI: Çavuşoğlu, Co-I's: Fukamachi, Navia (Cleveland Clinic)

09/2008-09/2012 "Soldier Navigation via High-Resolution-Gait-Corrected Inertial Measurement Units (IMUs)"
DARPA MINT W31P4Q-08-C-0253
Total Amount: $6,348,065
Percent: 9% (co-Investigator)
PI: Mastrangelo (Utah), co-I's: Çavuşoğlu, Mehregany (CWRU), Erdemir, van den Bogert (Cleveland Clinic), Young (Utah)

09/2008-08/2012 "The Haptic E-Model: A Computational Model of Human Sensory-Motor Performance in Haptic Manipulation"
NSF CISE IIS-0805495
Total Amount: $382,000
Percent: 100% (**Principal Investigator**)
PI: Çavuşoğlu

07/2008-08/2010 "Virtual Reality-Based Training Tools for Endoscopic Neurosurgery"
Cleveland Foundation
Subaward Amount: $150,000
Percentage: 100% (Principal Investigator of Subaward)
PI (Subaward): Çavuşoğlu

06/2005-05/2010 "CNS Plasticity Induced by Motor Learning Technologies Following Stroke"
Veterans Administration (VA)
Total (Subaward) Amount: $109,000 (Multi-institution total: $3,285,817)
Percent (of Multi-Institutional Total): 15% (co-Investigator)
PI: Daly (Cleveland VA Medical Center), Co-I's: Çavuşoğlu (among others)

09/2004-09/2009 "Medical Robotics and Human-Machine Interfacing Research at the Case Western Reserve University"
NSF CISE CNS-0423253
Total Amount: $211,945
Percentage: 50% (**Principal Investigator**)
PI: Çavuşoğlu, Co-PI: Newman (CWRU)

09/2006-08/2009 "CRI: Infrastructure for Managing and Analyzing Large Scale Biological Data via Utility Computing"
NSF
Total Amount: $313,000
Percent: 10% (Senior Personnel)
PI: Yang (CWRU), Senior Personnel: Çavuşoğlu (among others)

11/2006-12/2008 "Virtual Reality as a Training Tool for Endoscopic Neurosurgical Procedures"
Rainbow Foundation
Total Amount: $20,000
Percentage: 50% (co- Principal Investigator)
PI: Cohen (CWRU), Co-I: Çavuşoğlu

10/2004-09/2008 "Deployment and Evaluation of Networked Surgical Simulations"
U.S. Dept. of Commerce NTIA, TOP-39-60-04003
Total Amount: $898,767 ($440,000 federal funding + $458,767 cost share)
Percentage: 40% (co- Principal Investigator)
PI: Liberatore (CWRU), Co-I: Çavuşoğlu

09/2003-09/2007 "SENSORS: Intelligent Micro-Sensor Array and Signal Processing for In Vivo Real-Time Study of Biological System Dynamics"
NSF CISE EIA-0329811
Total Amount: $675,000
Percentage: 15% (co- Principal Investigator)
PI: Young (CWRU), Co-PI's: Çavuşoğlu, Ko, Loparo, Nadeau (CWRU)

09/2002-09/2006 "Intelligent Robotic Tools and Telepresence Environment for Off-Pump (Beating Heart) Coronary Artery Bypass Graft Surgery"
NSF CISE IIS-0222743
Total (Subaward) Amount: $190,755 (Multi-institution total: $324,567)
Percentage (of Multi-Institutional Total): 50% (Principal Investigator of Subaward)
PI: Sastry (UC Berkeley), Senior Personnel and Subaward PI: Çavuşoğlu

07/2004-12/2005 "Virtual Reality as a Training Tool for Endoscopic Neurosurgical Procedures"
Rainbow Foundation
Total Amount: $20,000
Percentage: 50% (co- Principal Investigator)
PI: Cohen (CWRU), Co-I: Çavuşoğlu

09/2003-08/2005 "Core Development, Integration and Demonstration of the DARPA Virtual Soldier"
DARPA
Total (Subaward) Amount: $18,600 (Multi-institution total: $1,500,000)
Percentage: 1% (Consultant)
PI: Athey (Univ. Michigan), Consultant: Çavuşoğlu (among others)

Student Supervising Activities

Postdoctoral Students

Sangeun Choi (2003-2004, 2005)
Myun Joong Hwang (2008-2009)

Ozkan Bebek	(2008-2011)
Russell Jackson	(2015-2018)
Taoming Liu	(2017-2018)
Eser Erdem Tuna	(2021-present)
Ran Hao	(2024-present)

Ph.D. Students

Ozkan Bebek	(January 2008)
Suriya Natsupakpong	(December 2009)
Emine Zeynep Erson	(September 2010)
Michael Fu	(March 2011)
Pasu Boonvisut	(May 2013)
Mark Renfrew	(September 2015)
Russell Jackson	(September 2015)
Taoming Liu	(January 2017)
Tipakorn Greigarn	(January 2018)
Orhan Ozguner	(August 2019)
Su Lu	(November 2020)
Eser Erdem Tuna	(April 2021)
Ran Hao	(March 2024)
Yuttana Itsarachaiyot	(June 2024)
Thomas Shkurti	(In progress, Ph.D. candidate)
Ridaa Ali	(In progress, Ph.D. candidate)
Ahmed Bugra Aydin	(In progress, Ph.D. candidate)
Yen-Chun Chen	(In progress, Ph.D. candidate)
Ilke Kas	(In progress, Ph.D. candidate)
Nathaniel Lombard Poirot	(Ph.D. candidate – Ph.D. not completed)

M.S. Students

Nathan Wedge	(August 2004)
Jason Rotella	(August 2004)
Michael Fu	(November 2005)
Venkata Kode	(November 2005)
Paul Jacobs	(October 2006)
Christian Miller	(July 2007)
Jonathan Hearn	(January 2008)
Mark Renfrew	(June 2009)
Nathan Brown	(January 2010)
Brandon Evans	(May 2010)
Taoming Liu	(September 2010)
Eser Erdem Tuna	(September 2011) – Bilkent University
Viraj Desai	(February 2016)
Matthew Swartwout	(August 2016)
Li Shao	(May 2017)
Ran Hao	(July 2017)
Madison Hillyard	(April 2021)
Ethan Shafer	(May 2021)
Matthew Gaines	(December 2021)
Sanjana Kamath	(April 2022)
Tucker Guen	(April 2022)
Diego Ronderos	(January 2023)

Quan Nguyen	(April 2023)
Noelle Nelson	(July 2023)
Cole Mousa	(December 2023)
Gabriel Foss	(January 2024)
Marc Chase	(April 2024)
Tobias Cowles	(December 2025)
Kevin Harris	(In progress)
Solomon Greene	(In progress)
Tamonwan Suphanit	(In progress)

Research Experience for Undergraduates

Jason Rotella	(Spring 2003 – Summer 2003)
Paul Jacobs	(Summer 2003 – Summer 2004)
Christian Miller	(Summer 2004)
Svend Johanssen	(Fall 2004 – Summer 2005)
Christopher Shoemaker	(Spring 2005, Fall 2005 – Spring 2007)
David Prabhu	(Spring 2006 – Spring 2007)
Tim Franke	(Spring 2006 – Summer 2007)
John Pao	(Summer 2006 – Fall 2006)
Andrew Hershberger	(Fall 2006 – Summer 2008)
Robin Hu	(Summer 2007 – Spring 2008)
Michael Hornfeck	(Fall 2007 – Spring 2008)
Kenneth Hornfeck	(Fall 2007 – Spring 2008)
BarbaraJoy Jones	(Summer 2008 – Fall 2008, Summer 2009)
Fang Zhou	(Fall 2008, Summer 2009)
Akshaya Annavajhala	(Summer 2009)
Deeptha Babu	(Summer 2009)
Justin Lee	(Summer 2009)
Joshua Dudik	(Summer 2010)
Joshua Matzek	(Summer 2010 – Fall 2010)
Kumiko Sano	(Summer 2010 – Fall 2011)
John Adams	(Spring 2011 – Fall 2012)
Stephan Nieuwoudt	(Spring 2011)
Conner Balin	(Summer 2011)
Eric Young	(Summer 2011 – Summer 2013)
Lu Yu	(Summer 2011 – Fall 2011)
Sean Kruer	(Summer 2011)
Chendi Jin	(Spring 2012)
Andrew Ritosa	(Summer 2012)
Eddie E. Massey, III	(Summer 2012 – Spring 2013)
Nathaniel Poirot	(Spring 2013 – Spring 2014)
Diego Waxemberg	(Spring 2013 – Summer 2013)
Marmeny Infante	(Spring 2013)
Xueyu “Jack” Hu	(Summer 2013)
Leah Feitl	(Summer 2013, Spring 2014 – Fall 2014, Summer 2015)
Haoran “Rick” Yuan	(Summer 2013 – Fall 2013, Summer 2014)
Reinhardt “Kam” Criss	(Spring 2014 – Spring 2016)
Kaustubh Desai	(Spring 2014 – Fall 2014)
Jose Nazario	(Summer 2014 – Fall 2014, Summer 2015)
Kristina Collins	(Spring 2015)
Jean-Pierre Castillo	(Summer 2015, Summer 2016)

Rebecca Frederick	(Fall 2015 – Spring 2016)
Mac Russell	(Spring 2016 – Fall 2017)
Steven Cady	(Spring 2016)
Katherine Koning	(Summer 2016)
Matthew Swartwout	(Summer 2016)
Xinyang (Samuel) Xu	(Spring 2017 – Spring 2018)
Mengxi Wu	(Summer 2017 – Fall 2017)
Connor Wolfe	(Summer 2017 – Fall 2017)
Allison Cohen	(Summer 2017)
Andrew Tarnoff	(Spring 2018, Fall 2018)
Hangxing Liu	(Spring 2018 – Spring 2019)
David Lituchy	(Spring 2018 – Spring 2019)
Juana Barrera Bayona	(Summer 2018 – Spring 2019)
Julian Narvaez	(Spring 2018 – Summer 2019)
Morris Lee	(Summer 2019)
Gautham Divakar	(Fall 2019, Fall 2020 – Spring 2021)
Sung Yoon Jung	(Spring 2019 – Spring 2020)
Tristan Greiner	(Summer 2019 – Spring 2020)
Michael Koltisco	(Summer 2019 – Summer 2020)
Sanjana Kamath	(Fall 2019 – Spring 2021)
Joseph Cressman	(Spring 2020 – Spring 2021)
Matthew Gaines	(Spring 2020 – Spring 2021)
Tucker Guen	(Summer 2020 – Spring 2021)
Jason Paximidas	(Fall 2020 – Fall 2021)
Diego Ronderos	(Spring 2021, Fall 2021)
Cole Mousa	(Fall 2021 – Spring 2023)
Joshua Soltz	(Summer 2022 – Fall 2022)
Isabella Devai Camacho De Oliveira	(Spring 2023 – Summer 2024)
Tobias Cowles	(Spring 2023 – Spring 2025)
Shaun Nunoo	(Summer 2023 – Fall 2024)
Adam Thompson	(Summer 2023 – Summer 2024)
Riddhi Srinivasan	(Fall 2023 – Spring 2024)
Rhyder Swen	(Fall 2023 – Summer 2025)
Chibunnam Onyedika	(Fall 2024 – Spring 2025)
Justin Fossum	(Summer 2025)

Senior Projects

Dan Meismer, Mark Renfrew	(Spring 2004)
Rocco Parro, Ran Ari-Gur, Chase Peers	(Fall 2004)
Jonathan Hearn, Robert Kofsky	(Spring 2005)
Mark Bell	(Summer 2005)
Hyung J. Kim	(Summer 2005)
Di Xiao, Noah Berland, Mariam Nawawi, Yunni Hairuddin	(Fall 2005)
Nasrulridza Yusuf, Mohd Zariff Amin Abu Bakar	(Fall 2006)
Mike Monkiewicz, Drew Wallet	(Fall 2006)
Tim Franke	(Spring 2008)
Christopher Shoemaker, Mark Notargiacomo, Mike Spence	(Fall 2008)
Kumiko Sano, Cory Breed, Edward Yanosik	(Spring 2011)
Leah Feitl	(Fall 2014)
Mengxi Wu, Isidora Radovanovic, Matt Haberbusch	(Spring 2018)
Tobias Cowles, Shaun Nunoo, Audrey Michel	(Spring 2025)

Adam Thompson, Colin Myers, Justice Smith	(Spring 2025)
Yaodan Zhang, Katherine Chen, Maxine Meng	(Fall 2025)
Lucas Romero, Danil Mosley, Savo Vidakovic	(Fall 2025)
Jacbo Hyman, Lana Oglesby, Irene Bhunia	(Fall 2025)
Trisha Ghosh, Ethan Nelson, Wiktor Golczac	(Fall 2025)

Visiting International Students and Faculty

Keehoon Kim	(Ph.D. student from Pohang University of Science and Technology (POSTECH), South Korea, 2003-2004)
Svend Johannsen	(B.S./M.S. student from Danmarks Tekniske Universitet (Technical University of Denmark), Copenhagen, Denmark, 2004-2005)
Prof. Keramettin Aydin	(Visiting Assistant Professor from Ondokuzmayis University School of Medicine, Samsun, Turkey, 2007)
Denizhan Yavas	(B.S. student from Middle East Technical University, Ankara, Turkey, 2009)
Fan Liang	(Ph.D. student from Beihang University, Beijing, China, 2008-2010)
Eser Erdem Tuna	(M.S. student from Bilkent University, Ankara, Turkey, 2010-2011)
Orhun Kose	(B.S. student from Middle East Technical University, Ankara, Turkey, 2011)
Tetsuya Horiuchi	(Ph.D. student from University of Tokyo, Japan, 2011-2012)
Ilkay Yildiz	(B.S. student from Bilkent University, Ankara, Turkey, 2015)
Ahmed B. Aydin	(B.S. student from Middle East Technical University, Ankara, Turkey, 2017)
Baris Balci	(B.S. student from Ozyegin University, Istanbul, Turkey, 2017)
Yutian Liu	(Visiting Associate Professor from Zhejiang Wanli University, China, 2017-2018)
Onat Dalmaz	(B.S. student from Bilkent University, Ankara, Turkey, 2019)

High School Students

Maya Madhavan	(Brecksville Broadview Heights High School (Grade 10), Summer 2007)
Ketki Lele	(Hathaway Brown School (Grade 10-11), Summer 2009, Summer 2010)
Reyyan Najeeb	(Shaker Heights High School (Grade 11-12), Summer 2010, Summer 2011)
Cengiz Ozan Ergungor	(Hawken School (Grade 10), Summer 2014)
Grace Shum	(Hawken School (Grade 11), Summer 2022)

Awards to Student Advisees

Russell Jackson, Ruth Barber Moon Award for excellence in leadership, School of Graduate Studies, Case Western Reserve University	*2014*
Tipakorn Greigarn, Graduate Dean's Instructional Excellence Award, Case Western Reserve University	*2014*
Tipakorn Greigarn, Best Research Poster Award, EECS Department Graduate Student Research Poster Session, Case Western Reserve University	*2013*
Ozkan Bebek, Marie Curie Fellow, European Commission 7th Framework Programme	*2013*
Michael Fu, National Institute of Health (NIH) KL2 Career Development Award	*2012*
Zeynep Erson, Research ShowCASE Outstanding Graduate Student Poster Winner, Case Western Reserve University	*2007*
Christian Miller, National Defense Science and Engineering Graduate Fellowship	*2007*
Ozkan Bebek, Jason Rotella, Research ShowCASE Outstanding Graduate Student Poster Winner, Case Western Reserve University	*2005*
Jonathan Hearn, Robert Kofsky, Second Place in Philips Best Capstone Project Competition in Computer Engineering, EECS Department, Case Western Reserve University	*2005*
Dan Meismer, Mark Renfrew, Winner of Philips Best Senior Project Competition in Computer Engineering, EECS Department, Case Western Reserve University	*2004*

Nathan Wedge, National Defense Science and Engineering Graduate Fellowship *2004*

Teaching Activities

Professor, Case Western Reserve University (CWRU)

Semester	Course	Enrollment	Contact Hours/Week
Fall 2025	**Robotics I** *(ECSE 489/EMAE 489/CSDS 489)* Graduate level introductory course on robotics.	40	3
Fall 2025	**Digital Signal Processing** *(ECSE 401)* Graduate level introductory course on digital signal processing, offered as an on-line distance learning course.	17	N/A
Fall 2024	**Robotics I** *(ECSE 489/EMAE 489/CSDS 489)*	30	3
Fall 2024	**Digital Signal Processing** *(ECSE 401)*	12	N/A
Fall 2023	**Robotics I** *(ECSE 489/EMAE 489/CSDS 489)*	52	3
Fall 2023	**Digital Signal Processing** *(ECSE 401)*	23	N/A
Sp. 2023	**Algorithmic Robotics** *(ECSE/CSDS 499)* Graduate level course on algorithmic fundamentals of robotics.	23	3
Fall 2022	**Robotics I** *(ECSE 489/EMAE 489/CSDS 489)*	41	3
Fall 2022	**Digital Signal Processing** *(ECSE 401)*	17	N/A
Fall 2021	**Algorithmic Robotics** *(ECSE/CSDS 499)*	35	3
Fall 2021	**Robotics II** *(ECSE/CSDS 589)* Advanced graduate level seminar-based course on robotics.	4	3
Fall 2020	**Algorithmic Robotics** *(ECSE/CSDS 499)*	18	3
Fall 2020	**Robotics II** *(ECSE/CSDS 589)*	7	3
Sp. 2020	**Algorithmic Robotics** *(EECS 499)*	23	3
Fall 2019	**Computer Graphics** *(EECS 366/466)* Graduate/undergraduate (dual code) course on introductory computer graphics.	63	3
Fall 2019	**Robotics I** *(EECS 489/EMAE 489)*	36	3
Sp. 2019	**Algorithmic Robotics** *(EECS 499)*	20	3
Sp. 2019	**Robotics II** *(EECS 589)*	7	3
Fall 2018	**Robotics I** *(EECS 489/EMAE 489)*	11	3
Sp. 2018	**Algorithmic Robotics** *(EECS 499)*	11	3
Fall 2017	**Computer Graphics** *(EECS 366/466)*	30	3
Fall 2017	**Robotics I** *(EECS 489/EMAE 489)*	27	3

Sp. 2017	**Algorithmic Robotics** *(EECS 499)*	14	3
Sp. 2017	**Robotics II** *(EECS 589)*	7	3
Fall 2016	**Robotics I** *(EECS 489/EMAE 489)*	19	3
Sp. 2016	**Algorithmic Robotics** *(EECS 499)*	31	3
Fall 2015	**Signals and Systems** *(EECS 246)* Junior-level undergraduate course on fundamentals of signals and systems required for Electrical, Systems, Mechanical, and Aerospace Engineering majors.	154	3
Fall 2015	**Computer Graphics** *(EECS 366/466)*	20	3
Sp. 2015	**Robotics I** *(EECS 489/EMAE 489)*	17	3
Fall 2014	**Signals and Systems** *(EECS 246)*	112	3
Fall 2014	**Algorithmic Robotics** *(EECS 600)*	6	3
Sp. 2014	**Robotics I** *(EECS 489/EMAE 489)*	32	3
Fall 2013	**Signals and Systems** *(EECS 246)*	103	3
Fall 2013	**Computer Graphics** *(EECS 366/466)*	19	3

Associate Professor, Case Western Reserve University (CWRU)

Semester	Course	Enrollment	Contact Hours/Week
Sp. 2013	**Algorithmic Robotics** *(EECS 600)*	7	3
Fall 2012	**Signals and Systems** *(EECS 246)*	106	3
Fall 2012	**Computer Graphics** *(EECS 366/466)*	25	3
Sp. 2012	**Haptic Systems** *(EECS 600)* Graduate level introductory course on haptic systems.	5	3
Fall 2011	**Signals and Systems** *(EECS 246)*	115	3
Fall 2011	**Computer Graphics** *(EECS 366/466)*	35	3
Sp. 2011	**Algorithmic Robotics** *(EECS 600)*	9	3
Fall 2010	**Signals and Systems** *(EECS 246)*	101	3
Fall 2010	**Computer Graphics** *(EECS 366/466)*	32	3
Sp. 2009	**Computer Graphics** *(EECS 366/466)*	27	3

Sp. 2009	**Robotics I** *(EECS 489/EMAE 489)*	16	3
Fall 2008	**Introduction to Digital Control** *(EECS 483)* Graduate level introductory course on discrete-time and sampled-data digital control systems.	8	3

Visiting Associate Professor, EEE Department, Bilkent University, Ankara, Turkey

Semester	Course	Enrollment	Contact Hours/Week
Sp. 2010	**Sampled Data Systems** *(EEE 445/545)* Advanced undergraduate and graduate level introductory course on discrete-time and sampled-data digital control systems.	49	3
Sp. 2010	**Circuit Theory** *(EEE 202)* Undergraduate level course on introductory circuit theory.	75	3
Fall 2009	**Circuit Theory** *(EEE 202)*	41	3

Assistant Professor, Case Western Reserve University (CWRU)

Semester	Course	Enrollment	Contact Hours/Week
Sp. 2008	**Haptic Systems** *(EECS 600)*	5	3
Sp. 2008	**Computer Graphics** *(EECS 366/466)*	25	3
Sp. 2008	**Introduction to Computer Game Design** *(EECS 290)* [Co-instructor: 25% effort] Freshman/sophomore undergraduate course on introduction to computer game design and implementation.	47	0.75
Fall 2007	**Signals and Systems** *(EECS 246)* Junior-level undergraduate course on fundamentals of signals and systems required for Electrical Engineering and Systems Engineering majors.	34	3
Sp. 2007	**Computer Graphics** *(EECS 366/466)*	18	3
Sp. 2007	**Introduction to Computer Game Design** *(EECS 290)* [Co-instructor: 25% effort]	35	0.75
Fall 2006	**Signals and Systems** *(EECS 246)*	34	3
Fall 2006	**Robotics I** *(EECS 489/EMAE 489)*	5	3
Sp. 2006	**Introduction to Computer Game Design** *(EECS 290)* [Co-instructor: 25% effort]	76	0.75
Fall 2005	**Signals and Systems** *(EECS 246)*	41	3
Fall 2005	**Robotics I** *(EECS 489/EMAE 489)*	12	3
Fall 2005	**Advanced Game Development Project** *(EECS 396L)* [Co-instructor: 15% effort] Senior level undergraduate project course on production (including design and	29	0.5

	implementation) of computer games taught in conjunction with the Cleveland Institute of Art Technology Integrated Media Environment and Communication Design Departments (*INM31X-41X-51X* **Game Production Seminar**).		
Sp. 2005	**Computer Graphics** *(EECS 366/466)*	30	3
Fall 2004	***Robotics I*** *(EECS489/EMAE489)*	7	3
Sp. 2004	**Computer Graphics** *(EECS 366/466)*	53	3
Fall 2003	**Robotics I** *(EECS489/EMAE489)*	17	3
Sp. 2003	**3-D Computer Graphics for Simulation** *(EECS 396/600)* Graduate/undergraduate (dual code) course on 3-D computer graphics, with emphasis on physical modeling and simulation.	20	3
Fall 2002	**Computer Assisted Surgical Systems: Medical Robotics and Surgical Simulation** *(EECS 600)* Special topics course on medical robotics and surgical simulation.	4	1

Lecturer, EECS Department, University of California, Berkeley

Semester	Course	Enrollment	Contact Hours/Week
Sp. 2001	**Introduction to Robotics** *(EE/BioE 125)* Introductory course on robotics taken by upper-division undergraduate and graduate students.	17	4

Graduate Student Instructor, EECS Department, University of California, Berkeley

Spring 1997, Fall 1997, Fall 1998 — **Introduction to Robotics** (*EE125)*
Instructor: Frank Tendick, (Enrollment: 25)

Fall 1995, Spring 1996 — **Introduction to Electrical Engineering** (*EECS 1*)
Instructor: Richard White, (Enrollment: 100)

Professional Leadership and Service Activities

Editorial

Associate Editor for the **IEEE Transactions on Robotics** *2012-2014*
Technical Editor for the **IEEE/ASME Transactions on Mechatronics** *2012-2013*
Associate Editor for IEEE Robotics and Automation Society Conference Editorial Board *2010, 2011*
Associate Editor for the **IEEE Transactions on Robotics** *2005-2009*

Leadership in Professional Societies

Co-Chair for IEEE Robotics and Automation Society Technical Committee on Telerobotics *2010-2013*

Invited Research Planning and Roadmapping Panels

Member, "Roadmapping for Robotics Workshop on Medical and Healthcare Robotics," organized by Computing Community Consortium, part of Computing Research Association *2008*

Member, "Interoperability Standards for Medical Modeling and Simulation" panel in MMVR 2006 Conference, organized by Telemedicine and Advanced Technology Research Center (TATRC), U.S. Army Medical Research & Materiel Command — *2006*

Member, "Interoperability Standards for Medical Modeling and Simulation" panel in MMVR 2005 Conference, organized by Telemedicine and Advanced Technology Research Center (TATRC), U.S. Army Medical Research & Materiel Command — *2005*

Member, DARPA Integrated Research Team on "Medical Robotics: Next Steps" — *2004*

Conference Organizing Committee Memberships

Member, Workshop and Tutorial evaluation committee for the IEEE/IRJ International Conference on Intelligent Robots and Systems (*IROS*) — *2014*

Member, Student paper awards committee for the IEEE/IRJ International Conference on Intelligent Robots and Systems (*IROS*) — *2013*

Workshop/Tutorial **co-chair** for the IEEE International Conference on Biomedical Robotics and Biomechatronics (*BioRob)* — *2008*

Member, Publicity committee for the IEEE/IRJ International Conference on Intelligent Robots and Systems (*IROS*) — *2007*

Member, Organizing committee for International Symposium on Innovations in Intelligent Systems and Applications (*INISTA*) — *2005*

Workshop and Session Organization

Co-organizer, Symposium on Telerobotics, at the 2011 IEEE/RSJ International Conference on Intelligent Robots and Systems (*IROS*) in San Francisco, CA — *2011*

Co-organizer, Tutorial on Control Issues in Haptic Teleoperation at the 2011 IEEE World Haptics Conference in Istanbul, Turkey — *2011*

Co-organizer, Workshop on Medical Cyber-Physical Systems at the 2010 IEEE International Conference on Robotics and Automation (*ICRA*) — *2010*

Program Committee Memberships

Robotics Science and Systems Conference (*RSS*)	*2007-2009, 2011,2012*
IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob)	*2008, 2010*
IEEE/ASME International Conference on Advanced Intelligent Mechatronics (*AIM*)	*2007*
International Symposium on Innovations in Intelligent Systems and Applications (*INISTA)*	*2005, 2007*
IEEE Int'l. Symp. on Computer-Based Medical Systems, special track on Medical Simulation	*2006*
IEEE/IRJ International Conference on Intelligent Robots and Systems (*IROS*)	*2004, 2006*
Turkish Automatic Control Conference *(TOK)*	*2002*

Proposal Reviews Panels, Study Sections, and Other Proposal Review

Member, HLBS Small Business Review Panel 2025/05 ZHL1 CSR-E (M2) 2, Center for Scientific Review, National Institutes of Health (NIH) — *2025*

Member, Special Emphasis Panel ZRG1 SCIL-R (70) R, Center for Scientific Review, National Institutes of Health (NIH) — *2022*

Member, Special Emphasis Panel ZHL1 CSR-O (J2) 1, Center for Scientific Review, National Institutes of Health (NIH) — *2022*

Member, Special Emphasis Panel ZRG1 SBIB-D(02), Center for Scientific Review, National Institutes of Health (NIH) — *2022*

Member, Special Emphasis Panel ZRG1 SBIB-Q(03), Center for Scientific Review, National Institutes of Health (NIH) — *2021*

Standing Member, Bioengineering, Technology, and Surgical Sciences Study Section (BTSS), Center for Scientific Review, National Institutes of Health (NIH)	*2016-2020*
Member, Special Emphasis Panel ZRG1 SBIB-H(55), Center for Scientific Review, National Institutes of Health (NIH)	*2018*
Member, (program name confidential) Review Panel, National Science Foundation (NSF)	*2016*
Member, Bioengineering, Technology, and Surgical Sciences Study Section (BTSS), Center for Scientific Review, National Institutes of Health (NIH)	*2016 (x2)*
Member, (program name confidential) Review Panel, National Science Foundation (NSF)	*2014 (x2)*
Member, Special Emphasis Panel ZRG1 SBIB-N(55)R, Center for Scientific Review, National Institutes of Health (NIH)	*2014*
Member, (program name confidential) Review Panel, National Science Foundation (NSF)	*2013 (x2)*
Member, Special Emphasis Panel ZRG1 SBIB-N(55)R, Center for Scientific Review, National Institutes of Health (NIH)	*2013 (x2)*
Member, Bioengineering, Technology, and Surgical Sciences Study Section (BTSS), Center for Scientific Review, National Institutes of Health (NIH)	*2013*
Member, Bioengineering, Technology, and Surgical Sciences Study Section (BTSS), Center for Scientific Review, National Institutes of Health (NIH)	*2012*
Member, (program name confidential) Review Panel, National Science Foundation (NSF)	*2012 (x2)*
External Reviewer, (program name confidential), National Science Foundation (NSF)	*2012*
Member, (program name confidential) Review Panel, National Science Foundation (NSF)	*2011*
Reviewer for Special Emphasis Panel on Robotics Technology Development and Deployment ZRG1 ETTN-B(50), Center for Scientific Review, National Institutes of Health (NIH)	*2011*
Member, Bioengineering, Technology, and Surgical Sciences Study Section (BTSS), Center for Scientific Review, National Institutes of Health (NIH)	*2011*
External Reviewer for proposals submitted to the US Army Medical Research and Materiel Command, American Institute for Biological Sciences	*2009*
External Reviewer for proposals submitted to the US Army Medical Research and Materiel Command, American Institute for Biological Sciences	*2008*
External Reviewer, Natural Sciences and Engineering Research Council (NSERC) of **Canada**	*2008*
Member, (program names confidential) Review Panel, National Science Foundation (NSF)	*2007 (x2)*
External Reviewer for proposals submitted to the US Army Medical Research and Materiel Command , American Institute for Biological Sciences	*2006*
External Reviewer, Natural Sciences and Engineering Research Council (NSERC) of **Canada**	*2005*
Member, (program name confidential) Review Panel, National Science Foundation (NSF)	*2004*
Member, Special Emphasis Panel ZRG1 SSS-H(91)S, Center for Scientific Review, National Institutes of Health (NIH)	*2003*

Session Chair

IEEE International Conference on Robotics and Automation, (ICRA)	*2021*
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)	*2020*
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)	*2011 (x2)*
IEEE International Conference on Robotics and Automation, (ICRA)	*2010 (x2)*
International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)	*2008*
IEEE International Conference on Robotics and Automation (ICRA)	*2008*
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)	*2007*
International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)	*2006*

Other Ongoing Service Activities

Reviewer for the *Science Robotics, IEEE Transactions on Robotics (and former IEEE Trans. on Robotics and Automation), Int'l. Journal of Robotics Research, IEEE Trans. on Biomedical Engineering, IEEE/ASME*

Trans. on Mechatronics, IEEE Trans. on Haptics, ACM Trans. on Applied Perception, Int'l. Journal of Robotics and Automation, Advanced Robotics, Haptics-e, Journal of Systems and Software, IEEE Robotics and Automation Magazine, IEEE Engineering in Medicine and Biology Magazine, and various conferences.

University Administrative Leadership and Service Activities

University

Member, CWRU Faculty Senate	*2025-present*
Search Advisory Committee for Dean of the Case School of Engineering (appt. by the University Provost)	*2025-present*
Case School of Engineering Dean's Reappointment Review Committee (appt. by the University Provost)	*2023*
University Undergraduate Faculty (UUF) Academic Computing Committee	*2005-2007*
Mt. Sinai Skills and Simulation Center (CWRU School of Medicine) Information Technology Subcommittee	*2005-2006*
Mt. Sinai Skills and Simulation Center (CWRU School of Medicine) Working Group	*2004-2007*

Case School of Engineering

Executive Committee	*2021-2025*
Mechanical and Aerospace Engineering Dept. PhD Qualifying Exam Committee	*2020-present*
Computer and Data Sciences Department Chair Search Committee	*2019-2020*
Mechanical and Aerospace Engineering Dept. Faculty Search Committee	*2018-2020*
Chair, Research Committee	*2014-2015*
Research Committee	*2014-2016*
Appointments Committee	*2013-2014*
Awards Committee	*2009*
Chair, Research Committee	*2008-2009*
Research Committee	*2007-2009*

Department

Undergraduate Committee (ECSE)	*2019-present*
Electrical Engineering Program Undergraduate Advisor	*2010-present*
Electrical Engineering Program Representative	*2011-present*
Electrical Engineering Program Minor Advisor	*2011-present*
Department-Level Approval Contact for Human Subjects Institutional Review Board Applications	*2019-present*
Electrical Engineering Program Faculty Search Committee	*2025-present*
Chair, Electrical Engineering Program NTT Faculty Search Committee	*2025-present*
Department-Level Approval Secondary Contact for Sponsored Project Applications	*2015-2025*
Electrical Engineering Program NTT Faculty Search Committee	*2024-2025*
Computer Engineering Program Faculty Search Committee	*2023-2024*
Electrical Engineering Program ABET Accreditation Coordinator	*2022-2023*
Chair, Electrical Engineering Program Faculty Search Committee	*2022-2023*
Chair, Electrical Engineering Program Faculty Search Committee	*2021-2022*
Electrical Engineering Program ABET Accreditation Coordinator	*2019-2021*
Associate Chair for the ECSE Division, EECS Department	*2017-2019*
Electrical Engineering Program ABET Accreditation Coordinator	*2017*
Undergraduate Committee	*2014-2016*
Executive Committee, EECS Department	*2013-2014*

Undergraduate Committee	*2010-2013*
Electrical Engineering Program PhD Qualifying Exam Committee	*2012*
Computer Engineering Program Undergraduate Advisor	*2005-2009*
ECE Division Undergraduate Committee	*2008-2009*
Chair, ECE Division Curriculum Committee	*2007-2008*
ECE Division Curriculum Committee	*2004-2008*
Electrical Engineering Program Undergraduate Advisor	*2003-2008*
Electrical Engineering Program PhD Qualifying Exam Committee (May)	*2007*
Electrical Engineering Program PhD Qualifying Exam Committee (January)	*2007*
Chair, Electrical Engineering Program PhD Qualifying Exam Committee (May)	*2006*
Electrical Engineering Program PhD Qualifying Exam Committee (January)	*2006*
Freshmen Advisor	*2004-2005*
Electrical Engineering Program PhD Qualifying Exam Committee	*2005*
Electrical Engineering Program PhD Qualifying Exam Committee	*2003*

Dissertation and Exam Committee Service Activities

PhD Dissertation Committee Service (excluding my students)

Tyler Petrie	*2021-2025*
Luis Mesias	*2022-2025*
Reid Bolding	*2022-2025*
Naren Nallapareddy	*2025*
Ammar Nahari	*2022-2025*
Akif Gormez	*2022-2025*
Jing Chen, William Nourse, Jee Hun Kim, Yifeng Gong, Hao Zhu	*2024 (x5)*
Natasha Rouse	*2021-2024*
Nicole Graf	*2020-2022*
Sherry Huang	*2020-2022*
Tim Dever, Jiajie Hu	*2020 (x2)*
Yin Guo, Mengdi Qian	*2019 (x2)*
Nabeel Chowdhury	*2018-2024*
Breanne Christie	*2017-2019*
Zhuofu Bai, Andrew Horchler, Ronny Shalev	*2016 (x3)*
Dominique Franson	*2016-2022*
Donghwa Jeong, Brian Mirletz, Meaghan Bowthorpe (**Univ. of Alberta, Canada**), Yang Chen, Tim Franke	*2015 (x5)*
Gang Shu, Harshil Parikh, Chia-Hua Lin	*2014 (x3)*
Julie Murphy	*2013- 2014*
Xinjian Qi	*2013*
Pawel Piotr Malysz (**MacMaster University, Canada**), Adirak Kanchanaharuhai, Boyu Sun, Nathan Wedge, Fangping Huang	*2011 (x5)*
Baowei Fei	*2008*
George Takla, Atikan Teber, Farhad Khaffashi	*2007 (x3)*
Jianfeng Wei	*2006*
Siddharth Chhatpar, Bo Yang, Simon Melikian	*2005 (x3)*
Ravi Hebbar, Xianqing Huang	*2003 (x2)*

MS Thesis Committee Service (excluding my students)

Grant Boone, Jiayi Chen, My Le	*2025 (x3)*
Cameron Byrne, Xiangru Li	*2024 (x2)*

Joseph Cressman, Ethan Frank, Alexis Scott	*2023 (x3)*
Dallan Goldblatt, Julian Narvaez *(Plan B)*	*2022*
Nicole Munson *(Plan B),* Jintian Wang, Rahul Pokharna,	*2021 (x3)*
Kevin Bradner, Matthew Haberbusch, Surag Ballejepalli, Yuwei Liu, Anna Sedlackova, Bruce Liu, Eric Miller, Ross Kasal	*2020 (x8)*
Tom Skhurti, Ziqi Huang, Jase Broderick, Tianxiang Zhang, Daniel Hayosh	*2019 (x5)*
James Starkman, Kristina Collins, Xiangyu Jiang	*2018 (x3)*
Luc Bettaieb, Yid Zou, Zhiang Chen, Xuanyi Zhang, Shaun Howard, Thomas Pech, Shipei Tian, Gabriel Ewing	*2017 (x8)*
Scott Sosnowski	*2016*
Devin Schwab	*2015*
Jeffrey Meunier *(Plan B),* Yifan Guo *(Plan B),* Matthew Heida *(Plan B)*	*2014 (x3)*
Steven Hecht, Edward Venator, Matthew DelBrocco, EJ Kreinar	*2013*
Deniz Guven (**Bilkent University, Turkey**), Char Rockey, Feng Cao, Bill Kulp, Stephanie Cockrell	*2012 (x5)*
Aaron Deal, Ty Taylor, Yan Zhang	*2011 (x3)*
Vivek Nagubadi	*2010 (x1)*
Jason Harper, Ashwin Deo	*2009 (x2)*
Emily Warren, David Buckmaster, Simon Alexander Carroll, Nick Sloves *(Plan B)*	*2008 (x4)*
Nicholas Livingstone, Yimimg Huang, Robert Hryniewicz	*2007 (x3)*
Isaac Hirt, David Pawlowski, Keith Bourgoin, Dmitriy Goldman *(Plan B)*	*2006 (x4)*
Donald Santos, Adam Covitch, Nathan Diederich, Rick Hudson *(Plan B)*	*2005 (x4)*
Joshua Aaron Levine, Ahmad T. Al-Hammouri, Stuart B. Morgan	*2004 (x3)*

PhD Oral Qualifying Exam Committee

William Nourse	*2019*
Taoming Liu	*2016*
Orhan Ozguner	*2015*
Tipakorn Greigarn *(chair)*	*2013*
Russell Jackson *(chair),* Pasu Boonvisut *(chair),* Kevin Kuo	*2010 (x3)*
Adirak Kanchanaharuthai	*2009*
Michael Fu *(chair),* Nathan Wedge	*2006 (x2)*
Wen-Teng Chang	*2004*
Glenn Emelko, Rick Hudson	*2003 (x2)*

Publications (Chronological Order)

Publications are listed in chronological order. Names of student co-authors whose research Dr. Çavuşoğlu has supervised, including visiting students, are underlined. On-line copies of the publications can be found at:
`http://engr.case.edu/cavusoglu_cenk/Publications.html`

Journal Publications *(Refereed)*

1. "A Laparoscopic Telesurgical Workstation." M. C. Cavusoglu, F. Tendick, M. Cohn, and S. S. Sastry. In *Institute of Electrical and Electronic Engineers (IEEE) Transactions on Robotics and Automation*, Vol. 15, No. 4, August 1999, pp. 728-739. doi: 10.1109/70.782027
2. "A Virtual Environment Testbed for Training Laparoscopic Surgical Skills." F. Tendick, M. Downes, T. Goktekin, M. C. Cavusoglu, D. Feygin, X. Wu, R. Eyal, M. Hegarty, and L. W. Way. In *Presence*, Vol. 9, No. 3, June 2000, pp. 236-255. doi: 10.1162/105474600566772
3. "Design of Bilateral Teleoperation Controllers for Haptic Exploration and Telemanipulation of Soft Environments." M. C. Cavusoglu, A. Sherman, and F. Tendick. In *IEEE Transactions on Robotics and Automation*, Vol. 18, No.4, August 2002, pp. 641-647. doi: 10.1109/TRA.2002.802199
4. "A Critical Study of the Mechanical and Electrical Properties of the Phantom™ Haptic Interface and Improvements for High Performance Control." M. C. Cavusoglu, D. Feygin, and F. Tendick. In *Presence*, Vol. 11, No. 6, December 2002, pp. 555-568. doi: 10.1162/105474602321050695
5. "Robotics for Telesurgery: Second Generation Berkeley/UCSF Laparoscopic Telesurgical Workstation and Looking towards the Future Applications." M. C. Cavusoglu, W. Williams, F. Tendick, and S. S. Sastry. In *Industrial Robot*, Special Issue on Medical Robotics, Vol. 30, No.1, January 2003, pp 22-29. doi: 10.1108/01439910310457670
6. "In Touch with Robotics: Neurosurgery for the Future." N. Nathoo, M. C. Cavusoglu, M. A. Vogelbaum, and G. H. Barnett. In *Neurosurgery*. Vol. 56, No.3, March 2005, pp.421-433. doi: 10.1227/01.NEU.0000153929.68024.CF
7. "GiPSi: A Framework for Open Source/Open Architecture Software Development for Organ Level Surgical Simulation." M. C. Cavusoglu, T. Goktekin, F. Tendick. In *IEEE Transactions on Information Technology in Biomedicine*. Vol. 10, No. 2, April 2006, pp. 312-321. doi: 10.1109/TITB.2006.864479
8. "Intelligent Control Algorithms for Robotic-Assisted Beating Heart Surgery." O. Bebek and M. C. Cavusoglu. In *IEEE Transactions on Robotics*, Vol. 23, No. 3, June 2007, pp. 468-480. doi: 10.1109/TRO.2007.895077
9. "Quantitative Comparison of Bilateral Teleoperation Systems Using μ Synthesis." K. Kim, M. C. Cavusoglu, and W. K. Chung. In *IEEE Transactions on Robotics*, Vol. 23, No. 4, August 2007, pp. 776-789. doi: 10.1109/TRO.2007.900625
10. "Design and Characterization of a Novel Hybrid Actuator Using Shape Memory Alloy and DC Micro-Motor for Minimally Invasive Surgery Applications." V. R. C. Kode, and M. C. Cavusoglu. In *IEEE/American Society of Mechanical Engineers (ASME) Transactions on Mechatronics*, Vol. 12, No. 4, August 2007, pp. 455-464. doi: 10.1109/TMECH.2007.901940
11. "Whisker-like Position Sensor for Measuring Physiological Motion." O. Bebek and M. C. Cavusoglu. In *IEEE/ASME Transactions on Mechatronics*, Vol. 13, No. 5, October 2008, pp.538-547. doi: 10.1109/TMECH.2008.2001184

12. "Description of Instantaneous Restriction Space of Multi-DOF Bilateral Teleoperation Systems Using Position Sensors in Unstructured Environments." K. Kim, W. K. Chung, and M. C. Cavusoglu. In *IEEE Transactions on Robotics*, Vol. 25, No. 5, October 2009, pp. 1150-1158. doi: 10.1109/TRO.2009.2024789
13. "Personal Navigation via High-Resolution-Gait-Corrected Inertial Measurement Units." O. Bebek, M. Suster, S. Rajgopal, M. J. Fu, X. Huang, M.C. Cavusoglu, D. Young, M. Mehregany, A.J. van den Bogert, and C. Mastrangelo. In *IEEE Transactions on Instrumentation and Measurement*, Vol. 59, No. 11, November 2010, pp. 3018-3027. doi: 10.1109/TIM.2010.2046595
14. "Determination of Elasticity Parameters in Lumped Element (Mass-Spring) Models of Deformable Objects." S. Natsupakpong, and M. C. Cavusoglu. In *Graphical Models*, Vol. 72, No. 6, November 2010, pp. 61-73. doi: 10.1016/j.gmod.2010.10.001
15. "High Fidelity Haptic Rendering of Frictional Contact with Deformable Objects in Virtual Environments Using Multi-Rate Simulation." P. Jacobs, M.J. Fu, and M. C. Cavusoglu. In *International Journal of Robotics Research*, Vol. 29, No. 14, December 2010, 1778-1792. doi: 10.1177/0278364910378540
16. "Effect of Visuo-Haptic Co-location on 3D Fitts' Task Performance in Physical and Virtual Environments." M. J. Fu, A. D. Hershberger, K. Sano, and M. C. Cavusoglu. In *Presence*, Vol. 21, No.3, Summer 2012, pp. 305-320. *PMCID: PMC3860595,* doi: 10.1162/PRES_a_00115
17. "Design of a Framework for Modeling, Integration, and Simulation of Physiological Models." E. Z. Erson and M. C. Cavusoglu. In *Computer Methods and Programs in Biomedicine*, Vol. 107, No. 3, September 2012, pp. 524-537. doi: 10.1016/j.cmpb.2011.11.010
18. "Human Arm-and-Hand Dynamics Model with Variability Analyses for a Stylus-based Haptic Interface." M. J. Fu and M. C. Cavusoglu. In *IEEE Transactions on Systems, Man, Cybernetics, Part B: Cybernetics*, Vol. 42, No. 6, December 2012, pp.1633-1644. doi: 10.1109/TSMCB.2012.2197387
19. "Design of a Parallel Robot for Needle Based Interventions on Small Animals." O. Bebek, M. J. Hwang, and M. C. Cavusoglu. In *IEEE/ASME Transactions on Mechatronics*, Vol. 18, No. 1, February 2013, pp.62-73. doi: 10.1109/TMECH.2011.2162427
20. "Heart Motion Prediction Based on Adaptive Estimation Algorithms for Robot Assisted Beating Heart Surgery." E. E. Tuna, T. J. Franke, O. Bebek, A. Shiose, K. Fukamachi, and M. C. Cavusoglu. In *IEEE Transactions on Robotics*, Vol. 29, No. 1, February 2013, pp. 261-276. *PMCID: PMC3747962,* doi: 10.1109/TRO.2012.2217676
21. "Virtual Reality Simulation: Basic Concepts and Use in Endoscopic Neurosurgery Training." A. Cohen, S. Lohani, S. Manjila, S. Natsupakpong, N. Brown, and M. C. Cavusoglu. In *Child's Nervous System*, Vol.29, No. 8, August 2013, pp. 1235-1244. doi: 10.1007/s00381-013-2139-z
22. "Estimation of Soft Tissue Mechanical Parameters from Robotic Manipulation Data." P. Boonvisut and M. C. Cavusoglu. In *IEEE/ASME Transactions on Mechatronics*, Vol. 18, No. 5, October 2013, pp. 1602-1611. *PMCID: PMC3767179,* doi: 10.1109/TMECH.2012.2209673
23. "Towards Active Tracking of Beating Heart Motion in the Presence of Arrhythmia for Robotic Assisted Beating Heart Surgery." E. E. Tuna, J. H. Karimov, T. Liu, O. Bebek, K. Fukamachi, and M. C. Cavusoglu. In *PLoS One*, Vol. 9, No. 7, July 2014, pp. e102877.*PMCID*:*PMC4105597*, doi: 10.1371/journal.pone.0102877
24. "Identification and Active Exploration of Deformable Object Boundary Constraints through Robotic Manipulation." P. Boonvisut and M. C. Cavusoglu. In *International Journal of Robotics Research (IJRR)*, Vol. 33, No. 11, September 2014, pp. 1446-1461. *PMCID: PMC4324691*, doi: 10.1177/0278364914536939
25. "Needle Grasp and Entry Port Selection for Automatic Execution of Suturing Tasks in Robotic Minimally Invasive Surgery." T. Liu and M. C. Cavusoglu. In *IEEE Transactions on Automation Science and Engineering*, Vol. 13, No. 2, April 2016, pp. 552-563. **Googol Best New Application Paper Award** *PMCID: PMC4857717*, doi: 10.1109/TASE.2016.2515161.
26. "Modeling and Validation of the Three Dimensional Deflection of an MRI-Compatible Magnetically-Actuated Steerable Catheter." T. Liu, N. Lombard Poirot, D. Franson, N. Seiberlich, M. A. Griswold and M.

C. Cavusoglu. In *IEEE Transactions on Biomedical Engineering*, Vol. 63, No. 10, October 2016, pp. 2142-2154. *PMCID: PMC4917491,* doi: 10.1109/TBME.2015.2510743.

27. "Design of an MRI-Guided Magnetically-Actuated Steerable Catheter." T. Liu, N. Lombard Poirot, T. Greigarn and M. C. Cavusoglu. In *ASME Journal of Medical Devices, Special Issue on Cardiovascular Device Development and Safety Assessment using Computational and/or Experimental Approaches*, Vol. 11, No.2, June 2017. *PMCID: PMC5467027,* doi: 10.1115/1.4036095
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66. "Differential Image Based Robot to MRI Scanner Registration with Active Fiducial Markers for an MRI-Guided Robotic Catheter System." E. E. Tuna, N. Lombard Poirot, J. Barrera Bayona, D. Franson, S. Huang, J. Narvaez, N. Seiberlich, M. Griswold, M. C. Cavusoglu. *In Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2020)*, Las Vegas, NV, October 25-29, 2020, pp. 2958-2964. *PMCID: PMC8202025,* doi: 10.1109/IROS45743.2020.9341043
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75. "Improving Kinematic Accuracy of Laparoscopic Surgical Robots Through Sub-Millimeter-Scale Kinematics." T. Shkurti, and M. C. Cavusoglu. In *Proceedings of the IEEE International Conference on Automation Science and Engineering (CASE 2025)*, Los Angeles, CA, August 17-21, 2025, pp. 2056-2063. doi: 10.1109/CASE58245.2025.11163784

Under Review

76. "Design of an MRI-Compatible Soft Robot Delivery System for In-Tissue Navigation in Minimally Invasive Neurosurgery." Y.-C. Chen, R. Hao, R. Z. Ali, M. Griswold, and M. C. Cavusoglu. Submitted to the *Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2026)*, Toronto, ON, Canada, July 26-30, 2026. *(Submitted – Under Review)*
77. "Real-Time Forward Kinematics for Control of an MRI-Guided Magnetically Actuated Robotic Catheter." Y.-C. Chen, Y. Itsarachaiyot, R. Hao, and M. C. Cavusoglu. Submitted to the *Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2026)*, Toronto, ON, Canada, July 26-30, 2026. *(Submitted – Under Review)*
78. …

Book Chapters

1. "Telesurgery and Surgical Simulation: Haptic Interfaces to Real and Virtual Surgical Environments." M. C. Cavusoglu, F. Tendick and S. S. Sastry. In McLaughlin, M. L., Hespanha, J. P., and Sukhatme, G., editors. *Touch in Virtual Environments.* IMSC Series in Multimedia. Prentice-Hall. 2001.
2. "Medical Robotics in Surgery." M. C. Cavusoglu. In M. Akay, editor, *Wiley Encyclopedia of Biomedical Engineering*, John Wiley and Sons, Inc. 2006.
3. "Surgical Simulation Technologies." M. C. Cavusoglu. In M. Kutz, editor, *Handbook of Biomedical Engineering and Design,* Second Edition, McGraw-Hill, Inc. Vol. 2, 2009.
4. "Towards the Development of a Robotic System for Beating Heart Surgery." O. Bebek and M. C. Cavusoglu. In J. Rosen, B. Hannaford, and R. Satava, editors, *Surgical Robotics - System Applications and Visions*, Springer, Inc. 2011.

Other Conference Publications *(Invited or Abstract Reviewed)*

1. "Laparoscopic Telesurgical Workstation." M. C. Cavusoglu, M. Cohn, F. Tendick, and S. S. Sastry. In *Proceedings of the SPIE International Symposium on Biological Optics (BIOS'98)*, San Jose, CA, January 24-30, 1998, pp. 296-303. doi: 10.1117/12.309479
2. "Development of Virtual Environments for Training Skills and Reducing Errors in Laparoscopic Surgery." F. Tendick, M. S. Downes, M. C. Cavusoglu, and L. W. Way. In *Proceedings of the SPIE International Symposium on Biological Optics (BIOS'98)*, San Jose, CA, January 24-30, 1998, pp. 36-44. doi: 10.1117/12.309489
3. "Virtual Environments for Training Critical Skills in Laparoscopic Surgery." M. S. Downes, M. C. Cavusoglu, W. Gantert, L. W. Way, and F. Tendick. In *Proceedings of Medicine Meets Virtual Reality VI (MMVR'98)*, San Diego, CA, January 28-31, 1998, pp. 316-322.
4. "Robotics for Telesurgery: Second Generation Berkeley/UCSF Laparoscopic Telesurgical Workstation and Looking towards the Future Applications." M. C. Cavusoglu, W. Williams, F. Tendick, S. S. Sastry. In *Proceedings of the 39th Allerton Conference on Communication, Control and Computing*, Monticello, IL, October 3-5, 2001. *(Invited).*
5. "Framework for Open Source Software Development for Organ Simulation in the Digital Human." M. C. Cavusoglu, T. Goktekin, F. Tendick and S. S. Sastry. In *Proceedings of the International Conference on High Performance Computing (HIPC 2002), (Lecture Notes in Computer Science, Vol.2552, Springer-Verlag, Berlin)*, Bangalore, India, December 18-21, 2002, pp. 713-714.
6. "GiPSi: A Draft Open Source/Open Architecture Software Development Framework for Surgical Simulation." M.C. Cavusoglu, T. Goktekin, F. Tendick and S. S. Sastry. Poster presented at the *Digital Biology: the Emerging Paradigm* Symposium, NIH, Bethesda, MD, November 6-7, 2003.

7. "Virtual Environments for Surgical Simulations over Best-Effort Networks." M.C. Cavusoglu and V. Liberatore. Poster presented at the *Digital Biology: the Emerging Paradigm Symposium*, NIH, Bethesda, MD, November 6-7, 2003.
8. "GiPSi: An Open Source/Open Architecture Software Development Framework for Surgical Simulation." M.C. Cavusoglu, T. Goktekin, F. Tendick and S. S. Sastry. In *Proceedings of Medicine Meets Virtual Reality XII (MMVR'04)*, Newport Beach, CA, January 15 – 17, 2004.
9. "Virtual Reality as a Training Tool for Endoscopic Neurosurgical Procedures." S. Manjila, M. C. Cavusoglu, N. Brown, and A. R. Cohen. The *33rd Annual Meeting of the AANS/CNS Section on Pediatric Neurological Surgery*, San Francisco, CA, December 8-11, 2004. **Hydrocephalus Award Candidate.**
10. "GiPSiNet: a Middleware for Networked Surgical Simulations." V. Liberatore, M. C. Cavusoglu, and Q. Cai. In *Proceedings of the IASTED Telehealth 2005*, Banff, Canada, June 19-21, 2005.
11. "Virtual Environment-Based Training Simulator for Endoscopic Third Ventriculostomy." N. Brown, S. Natsupakpong, S. Johannsen, S. Manjila, Q. Cai, V. Liberatore, A. R. Cohen, and M. C. Cavusoglu. In *Proceedings of Medicine Meets Virtual Reality XIV (MMVR'06)*, Long Beach, CA, January 24 – 27, 2006, pp. 73-75.
12. "Evaluation Methods of a Middleware for Networked Surgical Simulations." Q. Cai, V. Liberatore, M. C. Cavusoglu, and Y. Yoo. In *Proceedings of Medicine Meets Virtual Reality XIV (MMVR'06)*, Long Beach, CA, January 24 – 27, 2006, pp.76-78.
13. "GiPSiNet: An Open Source/Open Architecture Network Middleware for Surgical Simulations." Q. Cai, V. Liberatore, and M. C. Cavusoglu. In *Proceedings of Medicine Meets Virtual Reality XIV (MMVR'06)*, Long Beach, CA, January 24 – 27, 2006, pp. 316-321.
14. "Quantitative Comparison of Bilateral Teleoperation Systems with Various Drive Mechanisms and Sensory Configurations." K. Kim, M. C. Cavusoglu, W. K. Chung, and J. Lee. In *Proceedings of the 2006 International Joint Conference of the Society of Instrument and Control Engineers (SICE), Japan, and the Institute of Control, Automation and Systems Engineers (ICASE), Korea, (SICE-ICASE 2006),* Bexco, Busan, Korea, October 18-21, 2006, pp. 221-226.
15. "Comparison of Numerical Integration Methods for Simulation of Physically-Based Deformable Object Models in Surgical Simulation." S. Natsupakpong, and M. C. Cavusoglu. In *Proceeding of the 12th Annual National Symposium on Computational Science and Engineering (ANSCSE12)*, Ubon Rajathanee, Thailand, March 27-29, 2008.
16. "Accelerating Depth Map Building with the GPU." N. Brown, and M. C. Cavusoglu. Poster presented at *2008 Fall Creek Falls Conference*, Burns, TN, September 7-10, 2008.
17. "PHY-SIM: Physiological Simulation, Integration, Modeling Toolkit." E. Z. Erson, M. C. Cavusoglu. Abstract presented at *Engineering Principles in Biological Systems, Joint Cold Spring Harbor Laboratory/Wellcome Trust Conference*, Hinxton, United Kingdom, October 14-16 2009.
18. "Phy-SIM: Physiological Model Simulation, Integration and Modeling Framework." E.Z. Erson, M. C. Cavusoglu. Abstract presented at *Virtual Physiological Human Network of Excellence Conference (VPH 2010)*, Brussels, Belgium, September 30, October 1, 2010.
19. "Control of an MRI-Guided Magnetically-Actuated Steerable Catheter System." T. Liu, D. Franson, N. Lombard Poirot, R. Jackson, N. Seiberlich, M. Griswold, M. C. Cavusoglu. Abstract presented at the *ISMRM 25th Annual Meeting & Exhibition (ISMRM 2017)*, Honolulu, HI, April 22-27, 2017.

Under Review

20. "Enabling MR-Guidance of Magnetically-Actuated Robotic Catheter Interventions Using Interleaved Imaging and Actuation." R. Ali, D. Franson, I. Devai Camacho de Oliveira, T. Cowles, D. Herzka, M. A. Griswold, M. C. Cavusoglu. Abstract submitted to *ISMRM Annual Meeting & Exhibition (ISMRM 2026)*, Cape Town, South Africa, May 9-14, 2026. *(Under Review)*

21. …

Patents

Granted

1. "Imaging Control to Facilitate Tracking Objects and/or Perform Real-Time Intervention." M. C. Cavusoglu, M. Renfrew, Z. Bai, T. Liu, N. Lombard Poirot, J. Ustin. US 10,026,015 B2, United States Patent and Trademark Office (USPTO), 2018.

Pending

2. "Magnetically Actuated Catheter Devices, Actuation Dithering for Thermal Management and/or Magnetically Actuated Catheter with Stiffening Element to Control Deflection." M. C. Cavusoglu, M. Griswold, S. Kamath, N. Lombard Poirot, G. Foss, D. Franson, T. Liu. World Intellectual Property Organization (WIPO) Patent Cooperation Treaty (PCT) WO 2024/197146 A2, USPTO 19/166,765. *(Filed – Pending)*
3. "Catheter Magnetic Actuation and Insertion Control, Catheter Localization and Contact Force Estimation, and/or Magnetically Actuated Catheter with Stiffening Element to Control Deflection." M. C. Cavusoglu, M. Griswold, T. Liu, N. Seiberlich, D. Franson, E. E. Tuna, N. Lombard Poirot. WIPO (PCT) WO 2024/196999 A1. *(Filed – Pending)*
4. "Magnetic Resonance-Based Catheter Localization." R. Z. Ali, R. Boyacioglu, M. C. Cavusoglu, A, Dupuis, M. Griswold, D. Herzka, USPTO US 2025/0298101 A1, 2025. *(Filed – Pending)*

Technical Reports

1. "Closed Loop Position and Force Control of Anthrobot III Robot Hand." M. C. Cavusoglu, G. Avkarogullari, and I.S. Koc. B.S. Project Report, (also report for TUBITAK AEAGE Project No 95-20-100), Department of Electrical and Electronic Engineering, Middle East Technical University, Ankara, Turkey, Spring 1996.
2. "Control of a Telesurgical Workstation." M. C. Cavusoglu. M.S. Project Report. University of California, Berkeley, May 20, 1997. Also UC Berkeley ERL Memo M97/35, May 1997.
3. "Multirate Simulation for High Fidelity Haptic Interaction with Deformable Objects in Virtual Environments." M. C. Cavusoglu, F. Tendick. UC Berkeley ERL Memo M00/5, January 24, 2000.
4. "Telesurgery and Surgical Simulation: Design, Modeling, and Evaluation of Haptic Interfaces to Real and Virtual Surgical Environments." M. C. Cavusoglu. PhD Thesis. University of California, Berkeley, August 23, 2000. Also UC Berkeley ERL Memo M00/43, August 2000.
5. "Kinematics and Dynamics of Phantom$^{(TM)}$ model 1.5 Haptic Interface." M. C. Cavusoglu, D. Feygin. UC Berkeley ERL Memo M01/15, March 20, 2001.
6. "GiPSi: A Draft Open Source/Open Architecture Software Development Framework for Surgical Simulation," T. Goktekin and M.C. Cavusoglu. Technical Report, Case Western Reserve University, March 2004.
7. "Issues in Development of High Confidence Medical Robotic Systems, Medical Simulations, and Networked Virtual Environments for Surgical Training," M. C. Cavusoglu. Position paper for *High Confidence Medical Device Software and Systems (HCMDSS) Workshop,* Philadelphia, PA, June 2-3, 2005.
8. "Real-Time Forward Kinematics and Jacobians for Control of an MRI-Guided Magnetically Actuated Robotic Catheter," R. Hao, Y. Itsarachaiyot, Y.-C. Chen, M. C. Cavusoglu. Technical Report, Case Western Reserve University, December 29, 2025, arXiv:2512.23085. doi: 10.48550/arXiv.2512.23085

Video

1. "Laparoscopic Telesurgical Workstation." M. C. Cavusoglu, M. Cohn, F. Tendick, and S. S. Sastry. In *Video Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'99)*, Detroit, MI, May 10-15, 1999.

Software

1. GiPSi (General Physical Simulation Interface) open source/open architecture framework for surgical simulation, version 1.0, March 2004. Available at: http://gipsi.case.edu/
2. GiPSi (General Physical Simulation Interface) open source/open architecture framework for surgical simulation, version 2.0, October 2008. Available at: http://gipsi.case.edu/

Invited Talks

1. "Robotic Telesurgical Workstation for Laparoscopy," Cavusoglu, M.C. Presented at Laboratoire d'Automatique De Grenoble, Grenoble, France, June 1998.
2. "Haptic Interfaces for Real and Virtual Surgery," Cavusoglu, M.C. Presented at NASA Ames Research Center, Moffett Field, CA, March 13, 2000.
3. "Telesurgery and Surgical Simulation: Haptic Interfacing to Real and Virtual Surgical Environments," Cavusoglu, M.C. Presented at Carnegie Mellon University, Robotics Institute, Pittsburgh, PA, May 17, 2000.
4. "Telesurgery and Surgical Simulation: Haptic Interfacing to Real and Virtual Surgical Environments," Cavusoglu, M.C. Presented at Middle East Technical University, Dept. of Electrical and Electronic Eng., Ankara, Turkey, September 2000.
5. "Telesurgery and Surgical Simulation: Haptic Interfacing to Real and Virtual Surgical Environments," Cavusoglu, M.C. Presented at INRIA Rhone-Alpes Research Center, Grenoble, France, April 2001.
6. "Millirobotics for Minimally Invasive Telesurgery, " Cavusoglu, M.C., Sastry, S.S. Presented at Touch in Virtual Environments: a One Day Conference on Haptics, University of Southern California, Los Angeles, CA, February 23, 2001.
7. "Open Source / Open Architecture Software Development Framework for Surgical Simulation," Cavusoglu, M.C. Presented at the DARPA/NSF Joint BioComp PI Meeting, Monterey, CA, November 27-30, 2001.
8. "Surgical Simulation: Virtual Environments Based Surgical Training Simulators to Open Source Simulation Development for the Digital Human," Cavusoglu, M.C. Presented at Case-Western Reserve University, Dept. of Electrical Eng. and Computer Sci., Cleveland, OH, February 2002.
9. "Robotics for Telesurgery: Second Generation Berkeley / UCSF Laparoscopic Telesurgical Workstation and Looking towards the Future," Cavusoglu, M.C. Presented at Case Western Reserve University, Dept. of Electrical Eng. and Computer Sci., Cleveland, OH, February 2002.
10. "Robotics for Telesurgery: Second Generation Berkeley / UCSF Laparoscopic Telesurgical Workstation and Looking towards the Future," Cavusoglu, M.C. Presented at Carnegie Mellon University, Dept. of Biomedical Engineering and Robotics Institute, Pittsburg, PA, April 2002.
11. "Robotics for Telesurgery: Second Generation Berkeley / UCSF Laparoscopic Telesurgical Workstation and Looking towards the Future," Cavusoglu, M.C. Presented at University of Maryland, Dept. of Mechanical Engineering, College Park, MD, April 2002.

12. “Robotics for Telesurgery: Second Generation Berkeley / UCSF Laparoscopic Telesurgical Workstation and Looking towards the Future,” Cavusoglu, M.C. Presented at Johns Hopkins University, Dept. of Computer Science and Department of Mechanical Engineering, April 2002.
13. “Robotics for Telesurgery: Second Generation Berkeley / UCSF Laparoscopic Telesurgical Workstation and Looking towards the Future,” Cavusoglu, M.C. Presented at University of British Columbia, Dept. of Electrical and Computer Engineering, Vancouver, BC, May 2002.
14. “Open Source / Open Architecture Software Development Framework for Surgical Simulation,” Cavusoglu, M.C. Presented at the DARPA BioComp PI Meeting, Washington, DC, May, 2002.
15. “Open Source / Open Architecture Software Development Framework for Surgical Simulation,” Cavusoglu, M.C . Presented at the Digital Human Project Unified Ontology Planning Meeting, National Institutes of Health, Bethesda, MD, July 2002.
16. “Robotic and Computer Assisted Surgical Systems,” Cavusoglu, M.C. Presented at the Turkish Automatic Control Conference, Ankara, Turkey, September, 2002
17. “Applications of Modeling and Simulation in Medicine and Biology,” Cavusoglu, M.C. Presented at the Turkish Automatic Control Conference, Ankara, Turkey, September, 2002.
18. “Robotics for Telesurgery,” Cavusoglu, M.C. Presented at Koc University, Istanbul, Turkey, December 2002.
19. “Robotics for Telesurgery: Second Generation Berkeley / UCSF Laparoscopic Telesurgical Workstation and Looking towards the Future,” Cavusoglu, M.C. Presented at Bilkent University, Ankara, Turkey, January 2003.
20. “GiPSi: A Draft Open Source/Open Architecture Software Development Framework for Surgical Simulation,” Cavusoglu, M.C., Goktekin, T. Presented at the Digital Human Project Geometry Workshop, at the MMVR Conference, Newport Beach, CA, January 2003.
21. “Robotic Telesurgery and Surgical Simulation,” Cavusoglu, M.C. Presented at the Cleveland FES Center, Cleveland, OH, July 2003.
22. “*Tutorial* – Simulation for Medical Training,” Liu, A., Cotin, S., Cavusoglu, M.C., Bowyer, M. Presented at the Medical Image Computing and Computer-Assisted Intervention Conference (MICCAI 2003), Montreal, Canada, November 2003.
23. “*Tutorial* – Medical Simulation: The State-of-the-Art and Beyond,” Liu, A., Cavusoglu, M.C., Cotin, S., Bowyer, M. Presented at the Medicine Meets Virtual Reality Conference (MMVR 2004), Newport Beach, CA, January 2004.
24. “GiPSi: A Draft Open Source/Open Architecture Software Development Framework for Surgical Simulation,” Cavusoglu, M.C. Presented at the Interoperability Standards Panel, at the Medicine Meets Virtual Reality Conference (MMVR 2005), Long Beach, CA, January 2005.
25. “Robotic Beating Heart Surgery: Design of Next-Generation Robotic Telesurgical Systems,” Cavusoglu, M.C. Presented at the University of California, Berkeley, Berkeley, CA, January 26, 2005.
26. “GiPSi: An Open Source/Open Architecture Software Development Framework for Organ Level Simulation,” Cavusoglu, M.C. Presented at the Ohio Aerospace Institute, Brook Park, OH, June 9, 2005.
27. “GiPSi: An Evolving Open Source/Open Architecture Software Development Framework for Surgical Simulation,” Cavusoglu, M.C. Presented at the Interoperability Standards Panel, at the Medicine Meets Virtual Reality Conference (MMVR 2006), Long Beach, CA, January 2006.
28. “GiPSi: An Evolving Open Source/Open Architecture Software Development Framework for Surgical Simulation,” Cavusoglu, M.C. Presented at the Center for Integration of Medicine and Innovative Technology, Boston, MA, June 2006.

29. "GiPSi: An Evolving Open Source/Open Architecture Software Development Framework for Surgical Simulation," Cavusoglu, M.C. Presented at the Stanford University Medical Media and Information Technologies (SUMMIT) Center, Palo Alto, CA, August 29, 2006.
30. "Virtual Reality Simulation as a Training Device for Minimally Invasive Neurosurgical Procedures," Cohen, A. and Cavusoglu, M.C. Presented at the Case Western Reserve University Department of Biomedical Engineering Seminar Series, Cleveland, OH, November 2, 2006.
31. "*Tutorial* – Virtual Environment-Based Surgical Training Simulators and Open Source/Open Architecture Surgical Simulation Development," Cavusoglu, M.C. Presented at the International Symposium on Health Informatics and Bioinformatics, Antalya, Turkey, May 1, 2007.
32. "Medical Robotics for Surgery and Medical Interventions," Cavusoglu, M.C. Presented at the Case Western Reserve University, Department of Biomedical Engineering, Cleveland, OH, September 28, 2007.
33. "Robotic Beating Heart Surgery: Design of Next-Generation Robotic Telesurgical Systems," Cavusoglu, M.C. Presented at Bilkent University, Ankara, Turkey, June 13, 2008.
34. "Robotic Beating Heart Surgery: Design of Next-Generation Robotic Telesurgical Systems," Cavusoglu, M.C. Presented at University at Buffalo, The State University of New York, Buffalo, NY, March 19, 2009.
35. "Robotic Beating Heart Surgery: Design of Next-Generation Robotic Telesurgical Systems," Cavusoglu, M.C. Presented at Bilkent University, Ankara, Turkey, October 15, 2009.
36. "Robotic Beating Heart Surgery: Design of Next-Generation Robotic Telesurgical Systems," Cavusoglu, M.C. Presented at TOBB Economy and Technology University, Ankara, Turkey, March 23, 2010.
37. "Robotic Beating Heart Surgery: Design of Next-Generation Robotic Telesurgical Systems," Cavusoglu, M.C. Presented at Sabancı University, Istanbul, Turkey, April 7, 2010.
38. "Robotic Surgery: A Telerobotic Perspective on the Design of Next Generation Systems," Cavusoglu, M.C. Presented at Telerobotics Summer School, Technical University of Munich, Munich, Germany, July 26, 2010.
39. "Robotic Surgery: A Model-Based Perspective on the Design of Next Generation Systems," Cavusoglu, M.C. Presented at the US/Japan Workshop on Development of Model-based Assistive Robotic Technologies for Medicine and Rehabilitation, San Francisco, CA, March 18, 2011.
40. "Development of a Robotic System for Performing High Accuracy Percutaneous Interventions," Cavusoglu, M.C. Presented at the Urology Research Seminar Series, Case School of Medicine, Cleveland, OH, May 23, 2011.
41. "Robotic Beating Heart Surgery: Design of Next Generation Robotic Surgical Systems," Cavusoglu, M.C. Presented at the 3rd US/Japan Workshop on Development of Model-based Assistive Robotic Technologies for Medicine and Rehabilitation, San Francisco, CA, September 26, 2011.
42. "Robotic Beating Heart Surgery: Design of Next Generation Robotic Surgery Systems," Cavusoglu, M.C. Presented at the University of California, Berkeley, Berkeley, CA, March 8, 2012.
43. "Towards Task Automation in Surgical Robotics," Cavusoglu, M.C. Presented at the 4th US/Japan Workshop on Development of Model-based Assistive Robotic Technologies for Medicine and Rehabilitation, San Francisco, CA, March 9, 2012.
44. "Robots," Cavusoglu, M.C. Presented at Bryden Elementary School, Beachwood, OH, April 11, 2013.
45. "Task Automation in Surgical Robots: Towards Intelligent Robotic Surgical Assistants," Cavusoglu, M.C. Presented as **Keynote Speaker** at the 2014 IEEE/RSJ Intelligent Robots and Systems (IROS 2014) Conference, Chicago, IL, March 17, 2014.
46. "Computational Models of Human Sensory-Motor Performance for Design of Next Generation Robotic Surgical Systems," Cavusoglu, M.C. Presented at "The Role of Human Sensorimotor Control in Surgical Robotics Workshop," 2014 IEEE/RSJ Intelligent Robots and Systems (IROS 2014) Conference, Chicago, IL, March 18, 2014.

47. “Robotic Beating Heart Surgery: Design of Next Generation Robotic Surgery Systems,” Cavusoglu, M.C. Presented at Vanderbilt University, Nashville, TN, October 9, 2014.
48. “Medical Robotic Systems for Surgical and Interventional Assistance,” Cavusoglu, M.C. Presented at Virtual Pediatric Cardiology Webinar Series, Gazi University, Ankara, Turkey, December, 18, 2014.
49. “Towards Intelligent Robotic Surgical Assistants,” Cavusoglu, M.C. Presented at the Laboratory of Computational Sensing and Robotics Seminar Series, Johns Hopkins University, Baltimore, MD, March 2, 2016.
50. “Magnetic Resonance Imaging-Guided Robotic Catheter System for Atrial Fibrillation Ablation,” Cavusoglu, M. C. Presented as **Featured Speaker** at the 2016 Design of Medical Devices Conference, Minneapolis, MN, April 13, 2016.
51. “Towards Intelligent Robotic Surgical Assistants,” Cavusoglu, M.C. Presented at the Automatic Control Laboratory (IfA), ETH Zurich, Switzerland, June 14, 2016.
52. “Development of a Magnetic Resonance Imaging-Guided Robotic Intravascular Active Catheter System,” Cavusoglu, M. C. Presented at the University of Michigan, Ann Arbor, October 13, 2017.
53. “Towards Intelligent Robotic Surgical Assistants,” Cavusoglu, M. C. Presented as **Semi-Plenary Speaker** at the International Symposium on Medical Robotics, Atlanta, GA, March 3, 2018.
54. “Towards Intelligent Robotic Surgical Assistants,” Cavusoglu, M. C. Presented as **Plenary Speaker** at the Turkish Robot Science Conference (ToRK 2018), Istanbul, Turkey, April 13, 2018.
55. “Towards Intelligent Robotic Surgical Assistants,” Cavusoglu, M. C. Presented at Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, December 7, 2018.
56. “Development of a Magnetic Resonance Imaging-Guided Robotic Intravascular Active Catheter System,” Cavusoglu, M. C. Presented at the University of California, Berkeley, June 12, 2019.
57. “Development of a Magnetic Resonance Imaging-Guided Robotic Intravascular Catheter System,” Cavusoglu, M. C. Presented at Georgia Institute of Technology, Institute for Robotics and Intelligent Machine (IRIM) Seminar Series, Atlanta, GA, September 20, 2023.
58. “Development of a Magnetic Resonance Imaging-Guided Robotic Intravascular Catheter System,” Cavusoglu, M. C. Presented at the University of California, Berkeley, Embodied Intelligence and Robotics (EMBER) Center Seminar Series, Berkeley, CA, October 17, 2025.