

RESUME – Hakduran Koc, Ph.D.

Hakduran Koc, Ph.D.

Chair and Associate Professor of Computer Engineering
College of Science and Engineering
University of Houston – Clear Lake

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EDUCATION

- Ph.D. in Computer Engineering** 2008
Syracuse University, Syracuse, NY
Thesis : Data Recomputation Based Optimizations in Embedded Systems
- M.S. in Computer Engineering** 2001
Syracuse University, Syracuse, NY
Project : Implementation of Selected Scheduling Algorithms and Required Tools
- B.S. in Electronics Engineering** 1997
Ankara University, Ankara, Turkey
Thesis : Optical Communication Using Delta Modulation
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PROFESSIONAL EXPERIENCE

- Chair** 2014 - Present
Computer Engineering Program
University of Houston – Clear Lake, Houston, TX
- Associate Professor** 2014 - Present
Computer Engineering Program
University of Houston – Clear Lake, Houston, TX
- Assistant Professor** 2008 - 2014
Computer Engineering Program
University of Houston – Clear Lake, Houston, TX
- Visiting Scholar** 2005 – 2008
Microsystems Design Laboratory
The Pennsylvania State University, University Park, PA
- Teaching Assistant** 2003 – 2007
Computer Engineering Program 2001 – 2002
Syracuse University, Syracuse, NY
- Research Assistant** 2002 – 2003
System Level Integration and Verification Laboratory
Syracuse University, Syracuse, NY
- Satellite On-Orbit Control Engineer** 1998 – 1999
TURKSAT Satellite Ground Control Station, Ankara, Turkey
- Electronics Engineer** 1997 – 1998
Bemas Electronics, Ankara, Turkey

ACCREDITATION and TRAININGS

- ABET Program Evaluator
- ABET IDEAL Scholar (IDEAL: Institute for the Development of Excellence in Assessment Leadership)
- Critical Thinking Workshop Series
- Board Governance Workshop
- Lone Star Governance Training by Texas Education Agency

TEACHING INTERESTS

- Computer Organization and Architecture
- Fundamentals of Logic Design
- Digital System Design
- Microcontroller Programming
- Microprocessor Interfacing
- Digital Systems Synthesis and Opt.
- Assembly Language
- Hardware Description Languages
- Embedded Systems
- Computer Aided Design
- Testing of Integrated Circuits
- VLSI Design

PROGRAM AND COURSE DEVELOPMENT

Computer Engineering Dual Degree Program

- The Dual Degree Program in Computer Engineering is for high-performing undergraduate students who would like to continue their graduate study in M.S. program immediately upon completion of the B.S. degree.

CENG 3731 - Microcontroller Programming

- Undergraduate core course with lab instruction.

CENG 5133 - Computer Architecture Design

- Graduate core course with lab instruction.

CENG 5534 - Advanced Digital System Design

- Graduate core course with lab instruction.

CENG 6534 - Digital Systems Synthesis and Optimization

- Graduate course with lab instruction.

RESEARCH INTERESTS

Main research interests include Computer Architecture, Embedded Systems, and Many-core Architectures. More specifically,

- Cyber Physical Systems
- Mixed Criticality Systems
- Performance improvements in many-core architectures
- Memory space minimization of data-intensive applications
- Power/energy optimizations in embedded systems
- Reliability improvements in digital systems
- Implementing human body movements in robotics environments at real-time
- Non-Uniform Cache Architectures (NUCA)
- High level synthesis

 RESEARCH GRANTS

- **Hakduran Koc (Co-PI)** with PI Ju H Kim and Co-PIs Said Bettayeb, Richard Puzdrowski, Kewei Sha; “Building Capacity: Improving STEM Graduation Rates through Engaged Learning”; Sponsor: National Science Foundation; Period: 10/2019 – 9/2024.
- **Hakduran Koc (PI)** “Improving Reliability of High Critical Tasks in Mixed Criticality Systems”; Sponsor: The grant, Bridges to STEM Careers by National Science Foundation; Period: 6/2019 – 8/2019.
- **Hakduran Koc (PI)** “Real-Time Charging Scheduling of Electric Vehicles Considering Charge Time Priority”; Sponsor: The grant, STEM Career Pathways: A University-Community College-Industry Partnership, by Department of Education; Period: 9/2018 – 10/2019.
- **Hakduran Koc (PI)** “Improving Reliability using Replications for Cyber Physical Systems”; Sponsor: UHCL CSE GRA Award; Period: 9/2018 – 12/2018.
- **Hakduran Koc (PI)** “Efficient Phase Partitioning of Data Intensive Applications”; Sponsor: The grant, STEM Career Pathways: A University-Community College-Industry Partnership, by Department of Education; Period: 9/2017 – 2/2018.
- **Hakduran Koc (Participant)** with Sadegh Davari (PI), Kathryn Matthew (Co-PI); “STEM Career Pathways: A University-Community College-Industry Partnership”; Sponsor: US Department of Education; Period: 10/2016 – 9/2021.
- **Hakduran Koc (PI)**; “I/O Processing for Cyber Physical Systems Using Scratch Pad Memory”; Sponsor: UHCL FRSF; Period: 10/2015 – 10/2016.
- **Hakduran Koc (PI)**; “Improving Performance and Energy Consumption through Path-Based Hardware/Software Partitioning”; Sponsor: Lekkos Endowment; Period: 7/2015 – 6/2016.
- **Hakduran Koc (PI)**; “Energy and Reliability Improvements in Many-Core Embedded Systems using Fault Propagation Scope”; Sponsor: UHCL FRSF; Period: 4/2014 – 3/2015.
- **Hakduran Koc (PI)**; “Integrating Parallel and Distributed Computing Topics into UHCL Computer Engineering Undergraduate Curriculum”; NSF/IEEE-TCPP CDER Center; July 2013, multi-semester. (*educational grant*)
- **Hakduran Koc (PI)**; “Improving Reliability through Task Recomputation in Heterogeneous Multi-Core Architectures”; Sponsor: UHCL FRSF; Period: 4/2013 – 3/2014.
- **Hakduran Koc (PI)**; “Real-Time Wireless Transfer and Implementation of Primitive Human Body Movements to Robotics Environments – Phase 1”; Sponsor: Texas Fortune Inc.; Period: 1/2013 – 1/2014.
- **Hakduran Koc (PI)**; “Reducing Energy Consumption in Single-Core Embedded Systems Using Data Recomputation”; Sponsor: UHCL FRSF; Period: 11/2011 – 10/2012.

 RESEARCH STUDENTS

Current Students

- **Martin Sonnier**, Undergrad Research Topic: "Reliability Improvements in Mixed-Criticality Systems", Summer 2019.
- **Seyit Ozturk**, M.S. Thesis Topic: "An Electronic Design Automation Tool for High Level Synthesis and Optimization".

Graduated Students

- **Vamsi Krishna Karanam**, M.S. Thesis, "Improving Reliability and Latency of High Critical Tasks in Mixed Criticality Systems", Fall 2019.

- **Sai Siddhu Shaik**, M.S. Thesis, "Reliability Modelling and Improvement Using Replications for Cyber Physical Systems", Spring 2017. (*Recipient of Outstanding Computer Engineering Graduate Student Award at UHCL, 2017*)
- **Myrzabek Murataliev**, M.S. Thesis, "Charging Scheduling of Electric Vehicles with Charge Time Priority", Spring 2017.
- **Pranitha Madupu**, M.S. Thesis, "Optimizing Power Consumption in Cyber Physical Systems Using Multiple Operating Modes", Spring 2017.
- **Mehmet Ucar**, M.S. Thesis, "Execution Phase Partitioning for Data Intensive Applications", Summer 2016.
- **Hoang Nguyen**, M.S. Thesis, "I/O Processing for Cyber Physical System using Scratchpad Memory", Spring 2016. (*Recipient of Outstanding Computer Engineering Graduate Student Award at UHCL, 2016*)
- **Muberra Akcaman**, M.S. Thesis, "Analysis of Static and Dynamic Memory Management Schemes in Embedded Systems Utilizing Software-Managed Memory", Summer 2015.
- **Mounika Garlapati**, M.S. Thesis, "Analysis of Data Compression and Recomputation in Multi-core Embedded Architectures", Spring 2015.
- **Elham Azari**, M.S. Thesis: "Improving Performance in Hardware/Software Co-design through Path-Based Partitioning", Spring 2015. (*Recipient of Outstanding Computer Engineering Graduate Student Award at UHCL, 2015*)
- **Oommen Mathews**, M.S. Thesis, "Targeting Fault Propagation Scope to Enhance Reliability in Embedded Systems", Fall 2014.
- **Arif Ceber**, M.S. Thesis, "Energy Efficient Design and Implementation of a Semi-Autonomous Mobile Robot Prototype", Spring 2014.
- **Fatih Karabacak**, M.S. Thesis, "Low-Power Multi-Node Wireless Network Design with Proprietary RF Protocol", Spring 2014. (*Recipient of Outstanding Computer Engineering Graduate Student Award at UHCL, 2014*)
- **Bayan Nimer**, M.S. Thesis, "Improving Reliability through Task Recomputation in Embedded Systems", Spring 2013. (*Recipient of Outstanding Computer Engineering Graduate Student Award at UHCL, 2013*)
- **Muhammad Shuaib**, M.S. Thesis, "Reducing Energy Consumption through Data Migration Analysis in Embedded Systems", Spring 2013.

- **Archit Gajjar**, Graduate Research Student, Topic: "Static Charging of Electric Vehicles at Private Stations", Summer 2019. (*Recipient of Outstanding Computer Engineering Graduate Student Award at UHCL, 2019*)
- **Sean Graham**, Undergraduate Research Student, Topic: "Charging Scheduling of Connected Electric Vehicles", September 2018 – October 2019.
- **Ronald Barahona**, Undergrad Research Student, Topic: "Performance Improvement through Execution Phase Partitioning", September 2017 – February 2018.

PUBLICATIONS

- **C** Hakduran Koc, Mounika Garlapati* and Pranitha P. Madupu*, "Data Compression and Re-computation Based Performance Improvement in Multi-Core Architectures", In Proceedings of the 10th IEEE Annual Computing and Communication Workshop and Conference (CCWC 2020), pp. , Las Vegas, NV, January 2020.
- **BC** Hakduran Koc and Oommen Mathews*, "Chapter 4: Enhancing System Reliability Through Targeting Fault Propagation Scope", In *Soft Computing Methods for System Dependability*, edited by Mohamed Arezki Mellal, IGI Global, December 2019, pp. 131-160, ISBN: 9781799817185.

- C Hakduran Koc, Archit Gajjar* and Sean Graham*, “Static Charging Scheduling of Electric Vehicles at Private Stations”, In Proceedings of 10th IEEE Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON 2019), pp. 237-240, Vancouver, BC, Canada, October 2019.
- C Hakduran Koc, Vamsi Krishna Karanam* and Martin Sonnier*, “Latency Constrained Task Mapping to Improve Reliability of High Critical Tasks in Mixed Criticality Systems”, In Proceedings of 10th IEEE Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON 2019), pp. 320-324, Vancouver, BC, Canada, October 2019.
- P Sean Graham* and Hakduran Koc, “Mixed Criticality in Connected Electric Vehicle Networks”, 25th Annual Student Conference for Research and Creative Arts, UHCL, Houston, TX, April 2019.
- C Hakduran Koc, Sai S. Shaik* and Pranitha P. Madupu*, “Reliability Modeling and Analysis for Cyber Physical Systems”, In Proceedings of the Ninth IEEE Annual Computing and Communication Workshop and Conference (CCWC 2019), pp. 451-454, Las Vegas, NV, January 2019.
- C A. Gajjar, X. Yang, H. Koc, et al., “Mesh-IoT Based System For Large-Scale Environment”, In Proceedings of the Fifth Annual Conference on Computational Science and Computational Intelligence (CSCI2018), pp., Las Vegas, NV, December 2018.
- C Pranitha P. Madupu*, Sai S. Shaik* and Hakduran Koc, “Improving Energy Efficiency of Cooling Systems in Data Centers through Usage Predictions”, In Proceedings of the 2018 DUAL Conference in Innovation and Automation, Houston, TX, October 2018.
- C A. Gajjar, X. Yang, L. Wu, H. Koc, I. Unwala, Y. Zhang, Y. Feng, “An FPGA Synthesis of Face Detection Algorithm using HAAR Classifiers”, In Proceedings of International Conference on Algorithms, Computing, and Systems (ICACS2018), pp. 133-137, Beijing China, July 2018.
- BC Hakduran Koc and Seyit Ozturk*, “Chapter 11: An Educational Tool for Digital Electronic System Synthesis and Optimization”, In *Marketing Initiatives for Sustainable Educational Development*, edited by Purnendu Tripathi and Siran Mukerji, IGI Global, June 2018, pp. 264-289, ISBN: 9781522556732.
- C Hakduran Koc and Pranitha P. Madupu*, “Optimizing Energy Consumption in Cyber Physical Systems using Multiple Operating Modes”, In Proceedings of the Eighth IEEE Annual Computing and Communication Workshop and Conference (CCWC 2018), pp. 520-525, Las Vegas, NV, January 2018.
- C Sai Siddhu Shaik* and Hakduran Koc, “Modelling Cyber Physical Systems for Reliability”, In Proceedings of the 2017 DUAL Conference in Innovation and Automation, Houston, TX, October 2017.
- C Pranitha Madupu* and Hakduran Koc, “An Application of Multiple Operating Modes in Cyber Physical Systems”, In Proceedings of the 2017 DUAL Conference in Innovation and Automation, Houston, TX, October 2017.
- C Hoang Nguyen* and Hakduran Koc, “Input/Output Processing using On-Chip Memory for Cyber Physical System”, In Proceedings of the Seventh IEEE Annual Computing and Communication Workshop and Conference (CCWC 2017), pp. 1-6, Las Vegas, NV, January 2017. **(Best Paper Award)**.
- C Hakduran Koc and Mehmet Ucar*, “MMC-based Phase Partitioning for Data Intensive Applications”, In Proceedings of the Seventh IEEE Annual Computing and Communication Workshop and Conference (CCWC 2017), pp. 1-4, Las Vegas, NV, January 2017.
- C Myrzabek Murataliev * and Hakduran Koc, “Exploration of Recharge Scheduling Algorithms for Electric Vehicle Networks”, In Proceedings of the 2016 INNOVATION Conference, Houston, TX, October 2016.

- C Hakduran Koc and Mehmet Ucar*, “MMC Based Execution Phase Partitioning for Embedded Applications”, In Proceedings of the 2016 INNOVATION Conference, Houston, TX, October 2016.
- C Hoang Nguyen* and Hakduran Koc, “I/O Processing for Cyber Physical System Using Scratchpad Memory”, In Proceedings of the 2016 INNOVATION Conference, Houston, TX, October 2016.
- C Elham Azari* and Hakduran Koc, “Improving Performance through Path-Based Hardware/Software Partitioning”, In Proceedings of the Fifth International Conference on Digital Information Processing and Communications (ICDIPC2015), pp. 54-59, Sierre, Switzerland, October 2015.
- C Oommen Mathews*, Hakduran Koc and Muberra N. Akcaman, “Improving Reliability through Fault Propagation Scope in Embedded Systems”, In Proceedings of the Fifth International Conference on Digital Information Processing and Communications (ICDIPC2015), pp. 300-305, Sierre, Switzerland, October 2015.
- J Seyit Ozturk*, Faruk Karaagac* and Hakduran Koc, “AYSE: Automated System Synthesis Environment”, International Journal of Technology and Educational Marketing (IJTEM), Vol. 4, Issue 2, pp. 86-104, 2014.
- C Elham Azari* and Hakduran Koc, “Hardware/Software Partitioning Based on Hot Path Analysis”, In Proceedings of the 2014 INNOVATION Conference, Houston, TX, October 2014.
- C Oommen Mathews* and Hakduran Koc, “Targeting Fault Propagation Scope to Enhance Reliability in Embedded Systems”, In Proceedings of the 2014 INNOVATION Conference, Houston, TX, October 2014.
- S Arif Ceber*, Fatih Karabacak* and Hakduran Koc, "Design and Implementation of a Semi-Autonomous Mobile Robot Prototype", In Proceedings of the 2014 AIAA (American Institute of Aeronautics Astronautics) Annual Technical Symposium, Houston, TX, May 2014.
- C Fatih Karabacak*, Hakduran Koc and Arif Ceber*, “A Low Power Electronic Sticker for Vehicle Identification System using Proprietary Active RFID Wireless Protocol”, In Proceedings of the International Conference on Connected Vehicles and Expo (ICCVE 2013), pp. 847-852, Las Vegas, NV, December 2013.
- W Arif Ceber*, Fatih Karabacak* and Hakduran Koc “A Low-Cost Robot Implementation with Primitive Human Body Movements”, In Proceedings of the Workshop on Automation and Robotics (WAR’13), Houston, TX, October 2013.
- C Fatih Karabacak*, Arif Ceber* and Hakduran Koc, “A Low-Power Proprietary Wireless Communication Protocol”, In Proceedings of the 2013 INNOVATION Conference, Houston, TX, October 2013.
- C Faruk Karaagac*, Hakduran Koc and Seyit Ozturk*, “An Educational Electronic Design Automation Tool for High Level Synthesis and Optimization”, In Proceedings of the International Conference on E-Learning and E-Technologies in Education (ICEEE 2013), pp. 165-170, Lodz, Poland, September 2013.
- C Bayan Nimer* and Hakduran Koc, “Improving Reliability through Task Recomputation in Heterogeneous Multi-Core Embedded Systems”, In Proceedings of the International Conference on Technological Advances in Electrical, Electronics and Computer Engineering (TAECE 2013), pp. 73-78, Konya, Turkey, May 2013.
- S Fatih Karabacak*, Arif Ceber* and Hakduran Koc, "Towards Low-Cost Power-Aware Wireless Transfer of Human Body Movements to Robotics Environments", In Proceedings of the 2013 AIAA (American Institute of Aeronautics Astronautics) Annual Technical Symposium, Houston, TX, May 2013.
- S Carol Fairchild* and Hakduran Koc, "Implementation of a Six Degree-Of-Freedom Robotic Arm", In Proceedings of the 2013 AIAA (American Institute of Aeronautics Astronautics) Annual Technical Symposium, Houston, TX, May 2013.

- J Hakduran Koc, Suleyman Tosun, Mahmut Kandemir and Ehat Ercanli, "Improving Memory Space Utilization in Multi-core Embedded Systems using Task Recomputation"; International Journal of Computer Science and Network, Volume 1, Issue 5, pp. 27-34, October 2012.
- C Hakduran Koc, "AYSE: Automated System Synthesis Environment", In Proceedings of the 2012 INNOVATION Conference, Houston, TX, October 2012.
- W Arif Ceber* and Hakduran Koc "Modeling and Design of a Pendulum Driven Spherical Robot", In Proceedings of the Workshop on Automation and Robotics (WAR'12), Houston, TX, October 2012.
- C Bayan Nimer* and Hakduran Koc, "Improving Reliability through Data Recomputation in Embedded Systems", In Proceedings of the 2012 INNOVATION Conference, Houston, TX, October 2012.
- C Muhammad Shuaib* and Hakduran Koc, "Reducing Energy Consumption through Data Migration in Multi-Bank Memory Architectures Utilizing Multiple Operating Modes", In Proceedings of the 2012 INNOVATION Conference, Houston, TX, October 2012.
- C Hakduran Koc, "Reducing Energy Consumption in Single-Core Embedded Systems Using Data Recomputation", In Proceedings of the 2011 INNOVATION Conference, Houston, TX, November 2011.
- C Hakduran Koc, Mahmut Kandemir, Ehat Ercanli, "Exploiting Large On-Chip Memory Space Through Data Recomputation", In Proceedings of the 23rd IEEE International SoC Conference (SOCC 2010), pp. 513-518, September 2010, Las Vegas, NV.
- C Hakduran Koc, "Data Recomputation Based Utilization of Large On-Chip Memory Space in Single Processor Embedded Systems", In Proceedings of the 2009 INNOVATION Conference, Houston, TX, September 2009.
- C Hakduran Koc, "Memory Utilization Schemes for Software-Managed Memories in Single and Multi-Core Embedded Systems", In Proceedings of the 2008 INNOVATION Conference, Houston, TX, November 2008.
- C Hakduran Koc, Mahmut Kandemir, Ehat Ercanli and Ozcan Ozturk, "Reducing Off-Chip Memory Access Costs Using Data Recomputation in Embedded Chip Multi-processors", In Proceedings of the 44th Design Automation Conference (DAC'07), pp. 224-229, June 2007, San Diego, CA. (**Ranked #3** in Most Popular Papers Category from ACM Digital Library's Refereed Journals and Conference Proceedings Downloaded in September 2007).
- W Hakduran Koc, Ehat Ercanli, Mahmut T. Kandemir and Ozcan Ozturk, "An ILP Formulation for Recomputation Based SPM Management for Embedded CMPs", In Proceedings of the Workshop on Optimizations for DSP and Embedded Systems (ODES'07), pp. 21-28, March 2007, San Jose, CA, USA.
- C Hakduran Koc, Ozcan Ozturk, Mahmut Kandemir, Sri H. K. Narayanan and Ehat Ercanli, "Minimizing Energy Consumption of Banked Memories Using Data Recomputation", In Proceedings of International Symposium on Low Power Electronics and Design (ISLPED'06), pp. 358-362, October 2006, Tegernsee, Germany.
- C Priyank Parakh, Divya Mullassery, Anand Chandrashekar, Hakduran Koc, Deniz Dal and Nazanin Mansouri, "Interconnect-Centric High Level Synthesis for Enhanced Layouts with Reduced Wire Length", In Proceedings of the 49th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS'06), August 2006, Puerto Rico.
- C Suleyman Tosun, Mahmut Kandemir and Hakduran Koc, "Using Task Recomputation During Application Mapping in Parallel Embedded Architectures", In Proceedings of International Conference on Computer Design (CDES'06), pp. 29-35, June 2006, Las Vegas, NV, USA.

- **C** Hakduran Koc, Suleyman Tosun, Ozcan Ozturk and Mahmut Kandemir, "Reducing Memory Requirements through Task Recomputation in Embedded Multi-CPU Systems", pp. 448-449, In the Proceedings of the Annual Symposium on VLSI (ISVLSI 2006), April 2006, Karlsruhe, Germany.
- **W** Hakduran Koc, Ehat Ercanli, Mahmut Kandemir and Seung W. Son, "Compiler-Directed Temporary Array Elimination", In Proceedings of the Workshop on Optimizations for DSP and Embedded Systems (ODES'06), 8 pages, February 2006, New York, USA.
- **J** Youngsik Kim, Suleyman Tosun, Hakduran Koc, Shekhar Kopuri and Nazanin Mansouri, "Automating Formal Verification of Synthesized RTLs with Pipelined Iterative Constructs", International Journal of Modeling and Simulation (IJMS), Vol. 25, Issue 3, pp. 210-220, 2005.
- **C** Suleyman Tosun, Hakduran Koc and Nazanin Mansouri, "Deriving Intermediary RTLs for Verification of Pipelined Synthesized Designs", In Proceedings of 2003 International Conference on VLSI (VLSI'03), pp. 382-387, June 2003, Las Vegas, Nevada, USA.

Note: J: Journal, BC: Book Chapter, C: Conference, S: Symposium, W: Workshop, P: Poster and () denotes advised students.*

PROFESSIONAL RECOGNITIONS AND AWARDS

Individual Awards and Recognitions

- **Best Paper Award**, "Input/Output Processing using On-Chip Memory for Cyber Physical System" by Hoang Nguyen and Hakduran Koc; IEEE Annual Computing and Communication Workshop and Conference (CCWC 2017), Las Vegas, NV, January 2017.
- **Minnie Stevens Piper Award Nominee**, University of Houston - Clear Lake, 2017.
- **Outstanding Student Branch Counselor Award** by IEEE Region 5, Kansas City, MO, April 2016.
- **Minnie Stevens Piper Award Finalist**, University of Houston - Clear Lake, 2016.
- **IEEE-USA Professional Achievement for Individuals Award** by IEEE-USA, Milwaukee, WI, May 2015.
- **Minnie Stevens Piper Award Finalist**, University of Houston - Clear Lake, 2015.
- **Outstanding Student Branch Counselor Award** by IEEE Region 5, New Orleans, LA, April 2015.
- **Minnie Stevens Piper Award Finalist**, University of Houston - Clear Lake, 2014.
- **Minnie Stevens Piper Award Finalist**, University of Houston - Clear Lake, 2013.
- **NSF/TCPP CDER Early Adopter Award**, July 2013.
- **Outstanding Student Branch Counselor Award** by IEEE Region 5, Tulsa, OK, April 2012.
- **Minnie Stevens Piper Award Finalist**, University of Houston - Clear Lake, 2012.
- **Academic paper ranked the third** in Most Popular Papers Category from ACM Digital Library's Refereed Journals and Conference Proceedings Downloaded, Paper Title: "Reducing Off-Chip Memory Access Costs Using Data Recomputation in Embedded Chip Multi-Processors", September 2007.
- **Student mentor award** by SIGDA-YSSP (Special Interest Group on Design Automation - Young Student Support Program), Design Automation Conference, June 2007 and June 2002.
- **Scholarship** by the Department of Education to pursue graduate studies (M.S. and Ph.D.) in USA, Ankara, Turkey, August 1999.
- **Ranked the best student** in the department upon graduation, the Department of Electronics Engineering, Ankara University, Ankara, Turkey, June 1997.

Leadership Awards and Recognitions

- **Congressional Recognition** by the Honorable Pete Olson, Member of United States Congress for “demonstrating dedication to excellence in education by helping mold the bright, young minds of our community and encouraging our students to succeed” and “playing a vital role in advocating for and working toward ensuring the needs and expectations of the school district are met” as a board member of Harmony Public Schools, January 2020.
- **Recognition of Texas House of Representatives** through a resolution by the Honorable Gene Wu, Member of Texas House of Representatives for “demonstrating an exemplary commitment to area students, through their vision and leadership” and “contributing immeasurably to the future of the Lone Star State” as a board member of Harmony Public Schools, January 2020.
- **Outstanding Small Student Branch Award** by IEEE Region 5 to IEEE UHCL Student Branch, Position: Branch Counselor, Kansas City, MO, April 2016.
- **Outstanding Small Student Branch Award** by IEEE Region 5 to IEEE UHCL Student Branch, Position: Branch Counselor, New Orleans, LA, April 2015.
- **Outstanding Small Section Award** by IEEE MGA to IEEE Galveston Bay Section, Position: Section Chair, June 2012. (**The best IEEE Small Section worldwide**).
- **Outstanding Small Student Branch Award** by IEEE Region 5 to IEEE UHCL Student Branch, Position: Branch Counselor, Tulsa, OK, April 2012.
- **Outstanding Small Section Award** by IEEE Region 5 to IEEE Galveston Bay Section, Position: Section Chair, Tulsa, OK, April 2012.
- **Most Improved Organization Award** by University of Houston - Clear Lake to UHCL IEEE Student Branch, Position: Branch Counselor, April 2012.
- **Professional Development Event of the Year Award** by University of Houston - Clear Lake to UHCL IEEE Student Branch, Position: Branch Counselor, April 2012.
- **Outstanding Small Section Award** by IEEE Region 5 to IEEE Galveston Bay Section, Position: Section Vice Chair, Baton Rouge, LA, April 2011.

PROFESSIONAL AND VOLUNTEER SERVICE ACTIVITIES

Professional Membership

- Institute of Electrical and Electronics Engineers (IEEE)
- Association of Computer Machinery (ACM)
- IEEE Computer Society
- IEEE Education Society

Academic Journal/Conference Review

- IEEE Transactions on Parallel and Distributed Systems (TPDS)
- ACM Transactions on Design Automation of Electronic Systems (TODAES)
- Elsevier Journal of Computer Languages, Systems and Structures (COMLAN)
- IEEE/ACM International Symposium on Microarchitecture (MICRO)
- VLSI Design Conference
- Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES)
- International Conference on E-Learning and E-Technologies in Education (ICEEE)
- IEEE Annual Computing and Communication Workshop and Conference (CCWC)
- Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)
- Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)

Thesis Committee Member

- Khoa Le, M.S. Thesis: “Kinematic Redundancy on Baxter Robot”, Computer Engineering, University of Houston-Clear Lake, in progress.
- Isaac Westby, M.S. Thesis: “Advanced MSBUS Enhancement for Additional Masters on SBUS”, Computer Engineering, University of Houston-Clear Lake, in progress.
- Archit Gajjar, M.S. Thesis: “IoT-Edge-Server Based Embedded System for Wide-Range Habitats”, Computer Engineering, University of Houston-Clear Lake, Spring 2019.
- Jessica De Leon, M.S. Thesis: “Classification of Cocaine Addicted Patients using 3D-to-1D Hilbert Space-Filling Curve Ordering of fMRI Activation Maps”, Computer Engineering, University of Houston-Clear Lake, Fall 2018.
- Hari Krishna Parimi, M.S. Thesis: “Mutation Testing using Time-Shift Operator”, Computer Engineering, University of Houston-Clear Lake, Spring 2018.
- Sanobar Kadiwal, M.S. Thesis: “Microsoft Kinect Based Real-Time Segmentation and Recognition for Human Activity Learning”, Computer Engineering, University of Houston-Clear Lake, Fall 2017.
- Daniel Carrejo, M.S. Thesis: “Implementing NASA’s Core Flight Software (cFS) in National Instruments Labview”, Computer Engineering, University of Houston-Clear Lake, Spring 2017.
- Munara Tolubaeva, Ph.D. Thesis: “Compiler Cost Model for Many-core and Heterogeneous Architectures”, Computer Science, University of Houston, Spring 2014.
- Hon Lon Lum, M.S. Thesis: “Optimized Matching Between Computation to Parallel Processors with Matrix Transform”, Computer Engineering, University of Houston-Clear Lake, Spring 2012.
- Yusuf Yildiz, M.S. Thesis: “IMED Computational Desk for Surgeons”, Computer Science, University of Houston, 2009.

Service to Profession

- ABET Program Evaluator for Engineering Accreditation Commission, 2018 - Present
- IEEE Galveston Bay Section (GBS) Board Member , 2009 - Present
 Institute of Electrical and Electronics Engineers (IEEE) is the largest professional organization worldwide with 420,000+ members. It has 300+ sections and 2,000+ student branches at colleges and universities on 10 geographical regions in over 160 countries. IEEE Galveston Bay Section has 350+ members with four chapters, three affinity groups, and several committees. Each year the section organizes one technical conference, several technical/non-technical workshops, a few student competitions, and numerous presentations. The section has been recognized by several regional and international awards. I have held the following executive committee positions in IEEE Galveston Bay Section:
 - Board Member, IEEE GBS January 2010 - Present
 - Computer Chapter Chair January 2014 - December 2014
 - Past Chair, IEEE GBS January 2013 - December 2013
 - Chair, IEEE GBS January 2012 - December 2012
 - Vice Chair, IEEE GBS January 2011 - December 2011
 - Secretary, IEEE GBS January 2010 - December 2010
 - Programs Chair January 2010 - December 2010
- IEEE UHCL Student Branch Counselor, 2009 - Present
 Each year the student branch at UHCL typically organizes one non-technical student conference, one technical workshop, one career fair, and several technical and non-technical presentations for students and faculty by inviting several local and national distinguished speakers. The branch has been recognized by several awards from the university and professional organizations.

- Advisory Board Member, North American University – Computer Science Program, March 2012 – Present
- Conference Session Chair
 - CCWC 2020, January 2020, Las Vegas, NV
 - IEMCON 2019, October 2019, Vancouver, BC, Canada
 - MWSCAS 2019, August 2019, Dallas, TX
 - CCWC 2019, January 2019, Las Vegas, NV
 - CCWC 2018, January 2018, Las Vegas, NV
 - CCWC 2017, January 2017, Las Vegas, NV
 - INNOVATION 2016 Conference, October 2016, Houston, TX
 - ICDIPC 2015, October 2015, Sierre, Switzerland
 - INNOVATION 2014 Conference, October 2014, Houston, TX
 - ICCVE 2013, December 2013, Las Vegas, NV
 - INNOVATION 2013 Conference, October 2013, Houston, TX
 - TAECE 2013, May 2013, Konya, Turkey
 - INNOVATION 2012 Conference, October 2012, Houston, TX
 - INNOVATION 2011 Conference, September 2011, Houston, TX
 - INNOVATION 2009 Conference, September 2009, Houston, TX
 - INNOVATION 2008 Workshop, November 2008, Houston, TX
- NSF Program Mentor, National Science Foundation UHCL Computer Engineering Program Mentor, 2011 – 2014.

Service to Community

- Director, Board of Directors - Harmony Public Schools, August 2015 – present
Harmony Public Schools are K-12 college preparatory charter schools focusing on math, science, engineering, and computer technologies. The system has 57 campuses in Texas serving around 35,000 students with around 4,000 faculty and staff members.
- Judge, First Lego League QT, Houston, TX, December 2017.
- Judge, First Lego League QT, Houston, TX, December 2016.
- Judge, I-SWEEEP 2016: International Sustainable World (Energy, Engineering & Environment) Project Olympiad, Houston, TX, April 2016.
- Judge, HSEF 2016: Harmony Science and Engineering Fair, Houston, TX, 2016.
- Judge, Future City Competition, NASA JSC Gilruth Center, Houston, TX, January 2016.
- Judge, HSEF 2015: Harmony Science and Engineering Fair, Houston, TX, March 2015.
- Judge, Future City Competition, NASA JSC Gilruth Center, Houston, TX, January 2015.
- Judge, I-SWEEEP 2014: International Sustainable World (Energy, Engineering & Environment) Project Olympiad, Houston, TX, April-May 2014.
- Project Reviewer, I-SWEEEP 2014: International Sustainable World (Energy, Engineering & Environment) Project Olympiad, Houston, TX, March 2014.
- Judge, Future City Competition, NASA JSC Gilruth Center, Houston, TX, January 2014.
- Committee Member, Future City Competition Organization Committee, 2013.
- Project Reviewer, I-SWEEEP 2013: International Sustainable World (Energy, Engineering & Environment) Project Olympiad, Houston, TX, 2013.
- Judge, Future City Competition, NASA JSC Gilruth Center, Houston, TX, January 2013.
- Committee Member, Future City Competition Organization Committee, 2012.

- Judge, I-SWEEEP 2012: International Sustainable World (Energy, Engineering & Environment) Project Olympiad, Houston, TX, May 2012.
- Project Reviewer, I-SWEEEP 2012: International Sustainable World (Energy, Engineering & Environment) Project Olympiad, Houston, TX, March 2012.
- Judge, Future City Competition, The San Jacinto Central Campus, Pasadena, TX, January 2012.
- Judge, I-SWEEEP 2011: International Sustainable World (Energy, Engineering & Environment) Project Olympiad, Houston, TX, April 2011.
- Judge, Future City Competition, The San Jacinto Central Campus, Pasadena, TX, January 2011.
- Community Outreach Day: Interfaith Caring Ministries Resale Shop, Houston, TX, February 2010.
- Judge, Future City Competition, The San Jacinto Central Campus, Pasadena, TX, January 2010.
- Community Outreach Day: Armand Bayou Nature Center, Houston, TX, September 2009.
- Judge, I-SWEEEP 2009: International Sustainable World (Energy, Engineering & Environment) Project Olympiad, Houston, TX, April 2009.

Service to University

- Computer Engineering Program Faculty Advisor, 2008 – Present
- Graduate Computer Engineering Program Admission Committee, 2008 – Present
- Computer Engineering ABET Committee, 2008 – Present
- Computer Engineering Undergraduate Senior Project Reviewer, 2008 – Present
- Tenure-track faculty 3rd year review committee, 2016, 2017
- Faculty Search Committee, 2015, 2016, 2017, 2018
- Engineering Suite Secretary Search Committee, Summer 2013
- Organized Career Fair at UHCL, 2012, 2013, 2014, 2015, 2016.
- Organized student conferences at UHCL
S-PAC (Student Professional Awareness Conference) is a non-technical student conference. Three distinguished speakers give presentations on non-technical topics. 200+ students and faculty members were present in each event.
 - S-PAC, 2019
 - S-PAC, 2018
 - S-PAC, 2016
 - S-PAC, 2015
 - S-PAC, 2014
 - S-PAC, 2013
 - S-PAC, 2012
 - S-PAC, 2010
 - S-PAC, 2009
- UHCL Faculty Senate, April 2017 – August 2018
- Faculty Senate Curriculum Committee, April 2017 – August 2018
- UHCL Piper Award Committee, Fall 2017
- International Faculty Connections Workgroup, Fall 2017
- CSE International Graduate Student Recruitment and Diversification Committee, 2017
- CSE Graduate Research Assistantship Procedure Committee, Fall 2017
- CSE Graduate Research Assistantship Award Committee, Fall 2017
- Fall and Spring SCE Graduate Advising and Registration Event, 2015 – Present

- Fall and Spring Hawk Premier, 2015 – Present
- Fall and Spring Commencement Ceremonies, 2008 – Present
- Fall and Spring University Open Houses, 2008 – Present
- Fall and Spring Faculty Assembly Meetings, 2008 – Present
- Fall and Spring Orientations for new students, 2008 – Present
- Fall and Spring Orientations for new international students, 2008 – Present
- Attended SCE faculty meetings, 2008 – Present
- Faculty Advisor, Turkish Student Association, 2008 – 2013
- Fall and Spring Student Ambassador, 2010 – 2015

REFERENCES

References are available upon request.