DR. EYUP CINAR, IEEE Senior

CONTACT INFORMATION	E-mail: eyup.cinar@ogu.edu.tr , exc8020@rit.edu
RESEARCH INTERESTS	Artificial Intelligence, Machine Learning for Manufacturing, Deep Learning, Anomaly Detection, Predictive Maintenance and Condition Monitoring, Automation and Process Control, Smart Manufacturing.

EDUCATION

Rochester Institute of Technology, Rochester, NY

Ph.D.,Microsystems Engineering, 2015

M.S., Electrical Engineering, 2010

Eskisehir Osmangazi University, Eskisehir, Turkey

B.S., Electrical and Computer Engineering (Double Major), 2008
- *Summa Cum Laude*

INTERNATIONAL PATENTS

1. Richard P. Good, **Eyup Cinar** "Initializing individual exposure field parameters of an overlay controller," (U.S. Patent number: 10788806)

2. **Eyup Cinar**, Boyd Finland, Patrick Minton, "A Dose Control Metholodology for Atomic-Layer-Deposition (ALD) process,"" (U.S. Patent number: 15/726,359)

JOURNAL PUBLICATIONS (SELECTED)

1. O. Gultekin, **E. Cinar**, K. Ozkan, A. Yazici "Multisensory data fusion-based deep learning approach for fault diagnosis of an industrial autonomous transfer vehicle," *Expert Systems with Applications*, Vol.200, p.117055, 2022.

2. **E. Cinar** "A Sensor Fusion Method Using Transfer Learning Models for Equipment Condition Monitoring," *Sensors*, Vol.22, Issue. 18, p.6791, 2022.

3. O. Gultekin, **E. Cinar**, K. Ozkan, A. Yazici "Real-time fault detection and condition monitoring for industrial autonomous transfer vehicles utilizing edge artificial intelligence," *Sensors*, Vol.22, Issue. 9, p.3208, 2022.

4. **E. Cinar**, S. Kalay, I. Saricicek "A Predictive Maintenance System Design and Implementation for Intelligent Manufacturing," *Machines*, Vol.10, Issue. 11, p.1106, 2022.

5. O. Kullu, **E. Cinar** "A Deep-Learning-Based Multi-Modal Sensor Fusion Approach for Detection of Equipment Faults," *Machines*, Vol.10, Issue. 11, p.1105, 2022.

6. E. Irgat, **E. Cinar**, A. Unsal, and A. Yazici "An IoT-Based Monitoring System for Induction Motor Faults Utilizing Deep Learning Models," *Journal of Vibration Engineering I& Technologies*, 2022 (Early Access).

7. O. Gultekin, **E. Cinar**, K. Ozkan, A. Yazici "A novel deep learning approach for intelligent fault diagnosis applications based on time-frequency images," *Neural Computing and Applications*, Vol.34, Issue.6, p.4803-4812, 2022.

8. **E. Cinar**, F. Sahin and D. Yablon "Development of a novel nanoindentation technique by utilizing a dual-probe AFM system," " *Beilstein Journal of Nanotechnology*, Vol.6, p 2015-2027, 2015.

9. **E. Cinar**,S. Zhou, J. DeCourcey, W. Yixuan, R. Waugh and J. Wan "Piezo1 regulates mechanotransductive release of ATP from human red blood cells" *Proceedings of National Academy of Science (PNAS)*, Vol.112, p. 11783-11788, 2015.

10. **E. Cinar**, and F. Sahin "New Classification Techniques for Electroencephalogram (EEG) Signals and a Real-Time EEG Control of a Robot," " *J. of Neural Computing and Applications*, Vol.22, p. 29-39, 2013.

Conference Publications (Selected)	1. A. Kurt, **E. Cinar** "Intelligient Fault Detection in Bearings Based on Transfer Learning," in Proc. of IEEE Innovations in Intelligent Systems and Applications Conference (ASYU), Biarritz, France, 2022.
	2. **E. Cinar** "A Sensor Fusion Method Using Deep Transfer Learning for Fault Detection in Equipment Condition Monitoring," in Proc. of IEEE International Conference on INnovations in Intelligent SysTems and Applications (INISTA), Biarritz, France, 2022.
	3. S. Kalay, **E. Cinar**, and I. Saricicek, "A Comparison of Data Imputation Methods Utilizing Machine Learning for a New IoT System Platform," in Proc. of IEEE 8th International Conference on Control, Decision and Information Technologies (CoDIT), Istanbul, Turkey, 2021.
	4. M. Yılmaz, **E. Cinar**, and A. Yazici, "Rdf-based semantic for condition monitoring of autonomous mobile robot," in Proc. of IEEE 2nd International Informatics and Software Engineering Conference (IISEC), Ankara, Turkey, 2021.
	5. E. Irgat, **E. Cinar**, and A. Unsal, "The detection of bearing faults for induction motors by using vibration signals and machine learning," in Proc. of 2021 IEEE 13th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDEMPED), Dallas, USA, 2021.
	6. Sang Yi, **E. Cinar**, M. Wang, Y.B. Lee, P. Minton "Run-to-Run Control Strategy of HARP Liner Thickness with Product Dependent Deposition Rates,"" XXIX Advanced Process Control, Austin, TX, Oct 9-12, 2017
	7. **E. Cinar**, and F. Sahin, "A system of systems analysis of a multi-probe SPM system," in Proc. of IEEE 10th System of Systems Engineering Conference, San Antonio, USA, 2015.
	8. **E. Cinar**, and F. Sahin, "A New Approach for Nanoindentation using Multiprobe AFM System," in Proc. of IEEE 14th International Conference on Nanotechnology, Toronto, Canada, 2014.
	9. G Chandrashekar, F Sahin, **E. Cinar**, A Radomski, and D Sarosky,"In-Vivo Fault Analysis and Real-Time Fault Prediction for RF Generators Using State-of-the-Art Classifiers," in Proc. of IEEE SMC Conference,Manchester, UK,2013.
	10. **E. Cinar**, and F. Sahin, "A study of Recent Classification Algorithms and a Novel Approach for EEG Data Classification," in Proc. of IEEE SMC Conference, Istanbul, Turkey 2010.
	11. **E. Cinar**, and F. Sahin, "EOG Controlled Mobile Robot Using Radial Basis Function Networks," in Proc. of IEEE ICSCCW Conference, Famagusta, North Cyprus 2009.
	12. R. Bowen **E. Cinar**, and F. Sahin, "System of Systems Approach to a Human Tracking Problem with Mobile Robots using a Single Security Camera," in Proc. of IEEE ICSCCW Conference, Famagusta, North Cyprus 2009.

Invited Talks	• IEEE 10th International Conference on Electrical and Electronics Engineering **Keynote Presentation** May 2023
	• "Piezo1 regulates mechanotransductive release of ATP from human red blood cells," 14th New York Complex Matter Workshop, Cornell University, NY Dec 2014
	• "A Novel Approach for Nanoindentation using Multiprobe AFM System," Nanonics Near-Field NanoPhotonics Workshop, Boston, MA July 2014
	• "High Aspect Ratio Micropillar arrays for studying nanoscale cellular traction forces," IEEE 37th Annual EDS/CAS activities in Western New York Conference, Rochester, NY **Invited Presentation** Nov 2013

HONOR AND AWARDS (SELECTED)	• Turkiye International Outstanding Leading Researcher Fellowship, 2020-2023 • GLOBALFOUNDRIES Spotlight Award, 2017 • Outstanding Contribution Award to IEEE System of Systems Engineering (SoSE) 2015 international conference organization, 2014 • Rochester Institute of Technology, Merit Scholarship, 2009 • The U.S. Department of State Fulbright Scholarship, 2008-2010
NATIONAL AND INTERNATIONAL ACADEMIC SERVICE (SELECTED)	• Ongoing reviewer for Journals including IEEE Systems Man and Cybernetics Journal, IEEE SMC Magazine, Sensors, Neural Computing and Applications, Brain Sciences • Publication co-chair of IEEE 12th and 10th System of Systems Engineering (SoSE) Conferences • Member of program committee for the 8th IEEE Systems of Systems Conference, Maui, Hawaii, 2013 • Member of organization committee for the 6th IEEE Annual Systems of Systems Conference, Albuquerque, NM, 2011.

WORK EXPERIENCE

Assistant Professor of Computer Engineering   Nov 2019 to present
Eskisehir Osmangazi University, Eskisehir, Turkey

Senior Engineer Semiconductor Patterning Data Scientist   April 2018 to Nov 2019
ASML-HMI, San Jose, CA, USA
Responsibilities:
• Development of Machine Learning models for microchip patterning defects utilizing metrology data

Senior Engineer Fault Detection Classification   Sep 2015 to April 2018
GLOBALFOUNDRIES, Fab8 Malta, NY, USA
Responsibilities:
• Advanced Process Control for CVD, PVD and Lithography processes
• Run-to-Run control, Fault Detection and Equipment Control
• Fab-wide systems integration

Graduate Research Assistant   May 2010 to Sept 2015
Microsystems Engineering Department, RIT

Research Assistant   June 2008 to May 2010
Electrical and Microelectronic Engineering, RIT