Emir Yılmaz

Contact: +81-3-3238-3405 | yilmaz@sophia.ac.jp | Sophia University, Krupp Hall, Room 327

Research Interests

Tribology, Surface Engineering & Machining, Heat Transfer, Machine Learning

Current Appointment

Sophia University — *Tokyo, Japan*
Assistant Professor — 2021 - Present
Department of Engineering & Applied Sciences
Precision Engineering Research Group

Education

Sophia University — *Tokyo, Japan*
Ph.D., Mechanical Engineering — 2020
Dissertation: "Development of Heat Transfer Models for Intake Systems"
Advisors: Takashi Suzuki, Mitsuhisa Ichiyanagi
M.Sc., Mechanical Engineering — 2017

Sabanci University — *Istanbul, Turkey*
B.Sc., Mechatronics Engineering, *minor in Energy Systems* — 2014
Advisor: Serhat Yeşilyurt
Study abroad semester at *Tokyo Metropolitan University* — Spring 2013

Publications

Up-to-date peer-reviewed published papers are available here.

Grants

ISUZU Advanced Engineering Center, LTD.
Surface micro-texturing effect on friction loss reduction in reciprocating sliding contacts, Budget: ¥2,200,000 (Co-PI) — 2021 - Present

Honors, Awards & Scholarships

Graduate School Research Award (JSAE) — 2019
Best Paper & Best Presentation Awards, International Conference of Automotive Technology for Young Engineers (ICATYE 2017) — 2018
MEXT Scholarship, Ph.D. (Japanese Government) — 2017
Nikki-Sayenoshi Scholarship, M.Sc. (Private Company) — 2016
JASSO Honors Scholarship, M.Sc. (Japanese Government) — 2015
Youth Exchange Ambassadorial Scholarship (Rotary International) — 2008

Academic Experience

Sophia University, Dept. of Engineering & Applied Sciences — *Tokyo, Japan*
Postdoc Fellow, *Thermal Engineering Lab.* — 2020 - 2021
Research Assistant — 2018 - 2020
Teaching Assistant — 2016 - 2018

Industry Experience

Volvo Group Trucks Technology, Ageo R&D Plant — *Saitama, Japan*
Vehicle Dynamics Engineering Intern — Feb-March 2016
Participated in design and concept review of the new "Medium Duty Quon" truck. Gained hands-on experience with testing and verification processes at Motegi Test Facility.

Ford Motor Company, Yeniköy Assembly Plant — *Kocaeli, Turkey*
Project & Maintenance Engineer, *Six-Sigma Green Belt* — 2014-2015
Managed Maintenance Operating Systems to minimize production downtime. Prepared preventive and predictive maintenance work orders, generated summary reports, and led CAPEX system management.

Teaching

Sophia University, Dept. of Engineering & Applied Sciences — *Tokyo, Japan*

MAT 104: Basics of Differential Equations	Fall'21 - Present
MEC 211: Basics of Mechanical System Design	Spring'21 - Spring'23
MEC 293: Mechanical System Exercise I	Spring'24 - Present
MEC 212: Special Topics on Mechanical Engineering	Fall'21 - Present
MEC 361: Machine Design	Fall'21 - Present
MEC 514: Fundamentals of Microsystem Design	Spring'21 - Spring'23
MEC 514: Fundamentals of Tribology	Spring'24 - Present
ADS 561: Machine Design & Data Analysis	Spring'24 - Present

Invited Talks

The future is here: low-carbon society & hydrogen-based fuels — 2021
Delivered mock lectures for high school students during the Open Campus event at Sophia University (in Japanese).

Development of Carbon Free Ammonia Engine — 2021
Presented on the development of ammonia internal combustion engines at the Zero Emission Mobility Power Source Research Consortium (in Japanese).

Skills

Software:
GT-Power, ANSYS, CAD (Creo, SolidWorks, Fusion 360)
Programming:
FORTRAN, Python, MATLAB; some experience with C++, JavaScript, LaTeX
Languages:
English (advanced), Japanese (fluent), Turkish (native)

Professional Memberships

Society of Automotive Engineers of Japan (JSAE)	2016 – Present
The Japan Society of Mechanical Engineers (JSME)	2021 – Present
The Japan Society for Precision Engineering (JSPE)	2021 – Present
The Japanese Society of Tribologists (JAST)	2022 – Present