LITES 2023
Leverage of IT for Engineering and Science
International Conference

30-31 October, 1 November 2023
İstanbul, Türkiye

TÜRK-ALMAN ÜNIVERSITESI / TÜRKISCH-DEUTSCHE UNIVERSITÄT — TECHNISCHE UNIVERSITÄT BERLIN — Universität Potsdam — DAAD Deutscher Akademischer Austauschdienst / German Academic Exchange Service

ALP HAVACILIK | Productive Machines | Allianz Teknik | B/S/H/ | SIEMENS | FESTO | MAN | Mercedes-Benz Türk

Day 1 Monday, 30.10.2023 - DB03 (Building D)		Speaker	Title
		Chairs: Jörg Krüger and Yunus Ziya Arslan	
13:45 - 14:15	**Reception and Registration**		
14:15 - 14:35	**Opening of the Conference**		
14:15 - 14:20		Welcome adress by Rector Cemal Yıldız	
14:20 - 14:25		Welcome adress by General Coordinator Ferit Küçükay	
14:25 - 14:30		Welcome adress by Vice-Rector Ali Gökhan Yavuz	
14:30 - 14:35		Welcome adress by Dean Yunus Ziya Arslan	
14:35 - 18:00	**Industry Session**	**All speakers for the industry session are attending in person.**	
14:35 - 15:05	Introduction to "AI for Engineering"	Jörg Krüger (TU Berlin)	
15:05 - 15:20	Industry Session: Impuls Lecture 1	Hakan Mandalı (COO-CTO for BSH Türkiye Ev Aletleri Tic. A.Ş.)	*Innovation and productivity impact of digital transformation in operations world*
15:20 -15:35	Industry Session: Impuls Lecture 2	Erdem Alptekin (Director of R&D and IT in Siemens Turkey)	
15:35 - 16:05	Industry Session: Talk 1	Zeynep Gül Koca (Mercedes-Benz Bus R&D Director) Selma Koç (Mercedes-Benz Bus R&D Director) Gökçe Bezmez (IT Director) Ozan Dikerler (Business Analytics)	
16:05 - 16:20	Industry Session: Talk 2	Fahri Eyeci (MAN)	
16:20 - 16:45	**Coffee Break**		
16:45 - 17:00	Industry Session: Talk 3	Tolga Kutlu (FESTO, CEO) Fikret Kemal Akyüz (FESTO-Technology management manager)	*Artificial intelligence (AI) applications in industry for sustainability and predictive maintenance. pneumatic cylinder monitoring.*
17:00 - 17:15	Industry Session: Talk 4	Ceyhun Eren (Director of Allianz Technic & Risk Engineering)	*Nat Cat risk management based on artificial intelligence (AI) applications allianz*
17:15 - 17:30	Industry Session: Talk 5	Gül Aktaş Kuş (Head of Digital Transformation for Operations, BSH)	*AI solutions with focus of traceability and process decision making*
17:30 - 18.00	Podium discussion	Moderation by Jörg Krüger	*Potentials and challenges of AI in engineering, especially for the industrial application. Expectations from industry concerning the development of competences at TGU as a potential research partner of the companies.*
19:00	**Dinner at http://filizler.com/**		

Day 2 Tuesday, 31.10.2023 - D108 (Building D)		Speaker	Title
Track 1 of 2 parallel Tracks (09:00 - 17:45)			
09:00 - 10:30	**Industry Session Part 2**	**Chair: Jörg Krüger**	
09:00 - 09:30	Industry Session Invited Keynote	Şenay İdil (Alp Aviation-General Manager), in person Atilla Ünver (Alp Aviation - IT Director) Ali Özen (Alp Aviation- Technology - Development Manager) Murat Sağlam (Alpata Technology - General Manager) Emrah Taylan (Alpata Technology - Deputy General Manager)	*Alp Aviation - A Turkish Aviation Company and it' s Technologies and Achievements*
09:30 - 09:50	Industry Session talk 1	Erdem Ozturk (Productive Machines), in person	*Increasing Roles of Robots in Machining*
09:50 - 10:10	Industry Session talk 2	Ömer Ganiyusufoglu, remote	
10:10 - 10:30	Industry Session talk 3	Esther Kieseritzky (Rubitherm GMBH), remote	*Efficient Cooling and Heating with Phase Change Materials (PCM)*
10:30 - 11:00	**Coffee Break**		
11:00 - 12:10	**Paper Session 1 - (Health Care/ Artificial Intelligence/Machine Learning)**	**Chair: Ali Gökhan Yavuz**	
11:00 - 11:30	Session 1 Invited Keynote	Sebastian Wolf (Heidelberg University), remote	*Joint parameter optimization for application in clinical instrumented gait analysis*
11:30 - 11:50	Session 1 talk 1	Serdar Ulusoy (Turkish-German University), in person	*Optimum Control of Structures with Active Tendons*
11:50 - 12:10	Session 1 talk 2	Hilal Denizoğlu Külli (Istanbul Atlas University), in person	*Is The Kinesiotaping Promote The Joint Torque, Muscular Activity And Cross-Activation?*
12:10 - 12:30	Session 1 talk 3	Kerim Atmaca (Turkish-German University), in person	*Predicting human body gait by solving tracking optimization problem*
12:30 - 14:00	**Lunch Break**		
14:00 - 15:30	**Paper Session 2 - (Health Care/ Artificial Intelligence/Machine Learning)**	**Chairs: Şafak Gökhan Özkan & Aysu Yarman**	
14:00 - 14:30	Session 2 talk 1	Yunus Ziya Arslan (Turkish-German University), in person	*How can we benefit from musculoskeletal modeling, simulation, and machine learning in gait analysis of patients with cerebral palsy?*
14:30 - 14:50	Session 2 talk 2	Alina Nawab Kidwai (Middle East Technical University), in person	*Can musculoskeletal modeling and simulation provide valid muscle force estimates for patients with cerebral palsy?*
14:50 - 15:10	Session 2 talk 3	Mustafa Erkam Özateş (Turkish-German University), in person	*Prediction of ground reaction forces from joint angles using machine learning*
15:10 - 15:30	Session 2 talk 4	Saliha Zeyneb Akıncı (Istanbul Medipol University), in person	*Development of a Finite Element Model of the Lumbar Spine*
15:30 - 16:00	**Coffee Break**		
16:00 - 17:45	**Paper Session 3 - (Energy Science / Energy Efficiency)**	**Chairs: Mukden Uğur & Samira F. Kurtoğlu Öztulum**	
16:00 - 16:30	Session 3 Invited keynote 1	Niyazi Serdar Sarıçiftci (Linz Institute for Organic Solar Cells (LIOS) Institute for Physical Chemistry Johannes Kepler University of Linz), remote	*Solar Energy Conversion into Chemical Fuels Using Organic and Bio-organic Systems*
16:30 - 16:55	Session 3 Invited keynote 2	Bilge Saruhan (German Aerospace Center), in person	*Energy autarkic sensor systems, miniaturization and structure integrated energy storage systems in satellite and aircraft applications*
16:55 - 17:20	Session 3 talk 1	Merja Helena Tölle (University of Kassel), in person	*Land-atmosphere interactions with regional climate modeling*
17:20 - 17:45	Session 3 talk 2	Osman Sinan Süslü (Turkish-German University), in person	*An operating system to control demand side management in a microgrid*
19:00	**Gala Dinner**		

Day 2 Tuesday, 31.10.2023 - C108 (Building C)		Speaker	Title
Track 2 of 2 parallel Tracks (09:00 - 17:45)			
09:00 - 10:30	Paper Session 4 - (Automation / Robotics / Control)	Chair: Michael Steinert	
09:00 - 09:30	Session 4 Invited keynote	George Michalos (University of Patras), in person	*Autonomy and adaptability in manufacturing - recent advances and future trends*
09:30 - 09:50	Session 4 talk 1	Hasan Smajic (TH Köln), in person	*Application-oriented knowledge transfer from theory to practice for smart automation and virtual product development*
09:50 - 10:10	Session 4 talk 2	Mesut Güneş (Otto-von-Guericke University Magdeburg), in person	*From wireless sensor networks to digital twins*
10:10 - 10:30	Session 4 talk 3	Erdem Onur Özyurt (Turkish German University), in person	*Adaptive heat gain estimation for window filming with building models and estimation of reduction in carbon emission for Turkish cities*
10:30 - 11:00	Coffee Break		
11:00 - 12:10	Paper Session 5 (Smart City / Traffic Engineering)	Chairs: João Ameixa & George Michalos	
11:00 - 11:30	Session 5 - Invited keynote	Fazel Ansari (TU Vienna), remote	*A competence-based planning methodology for optimizing human resource allocation in industrial maintenance*
11:30 - 11:50	Session 5 talk 1	Mehmet Ali Taş (Turkish-German University), in person	*Site planning for wind turbines: A case analysis from Turkey*
11:50 - 12:10	Session 5 talk 2	Frank Rackwitz (TU Berlin), remote	*Potentials and challenges of digitalization in geotechnics*
12:10 - 12:30	Session 5 talk 3	Jörg Raisch (TU Berlin), remote	*Efficient consensus in multi-agent systems over wireless communication channels & its use in traffic automation problems*
12:30 - 14:00	Lunch Break		
14:00 - 15:30	Paper Session 6 (Material Science)	Chair: Merja Helena Tölle	
14:00 - 14:30	Session 6 - Invited keynote	João Ameixa (University of Potsdam), in person	*innoFSPEC transfer lab Potsdam: current projects and future directions*
14:30 - 14:50	Session 6 talk 1	Samira Fatma Kurtoğlu Öztulum (Turkish German University), in person	*Characterization of site-isolated iridium atoms supported on reduced graphene aerogel at an exceptional Ir loading of 23.8 wt% with synchrotron and electron microscopy techniques*
14:50 - 15:10	Session 6 talk 2	Çağla Söz (Turkish German University), in person	*Nonwettable hybrid paper sheets: Effect of the coating formulation on the surface and barrier properties*
15:10 - 15:30	Session 6 talk 3	Erdem Onur Özyurt (Turkish German University), in person	*Material classification by investigation of 3D morphological chip attributes using neural networks*
15:30 - 16:00	Coffee Break		
16:00 - 17:45	Paper Session 7 (Bio Science)	Chairs: Florian Schweigert & Çağla Söz	
16:00 - 16:30	Session 7 - Invited keynote	Julius Rabl (ETH Zürich), remote	*Structural biology: seeing the machinery of life*
16:30 - 16:55	Session 7 talk 1	Michael Steinert (Technical University of Braunschweig), in person	*Legionella pneumophila pathogenicity in human lung tissue explants and development of anti-infectives*
16:55 - 17:20	Session 7 talk 2	Orkide Coşkuner Weber (Turkish German University), in person	*Intrinsically disordered proteins and bio-mimicked polymers for soft robotics*
17:20 - 17:45	Session 7 talk 3	Aysu Yarman (Turkish German University), in person	*Molecular imprinting: A way to fabricate artificial antibodies for SARS-CoV-2 sensing*
19:00	Gala Dinner		

Day 3 Wednesday, 01.11.2023 - D108 (Building D)		Speaker	Title
09:00 - 10:50	Paper Session 8 - (Artificial Intelligence / Machine Learning)	Chairs: Orkide Coşkuner & Osman Sinan Süslü	
09:00 - 09:30	Session 8 Invited keynote 1	Nanya Li (Nanjing University of Aeronautics & Astronautics, China), remote	*Predictive modelling for microwave assisted additive manufacturing of composite materials*
09:30 - 10:00	Session 8 Invited keynote 2	Pai Zheng (The Hong Kong Polytechnic University, HKSAR, China), remote	*Augmented reality-assisted digital twin for human-centric smart manufacturing: An exploration*
10:00 - 10:30	Session 8 Invited keynote 3	Roman Henze (Technical University of Braunschweig), in person	*KI fahr mich nach Hause" / "AI Drive me home" / "YZ beni eve götür*
10:30 - 10:50	Session 8 talk 1	Şafak Gökhan Özkan (Turkish German University), in person	*Modern vs conventional mineral processing methods for borates*
10:50 - 11:10	Coffee Break		
Wednesday, 01.11.2023 Track 1 of 2 parallel Tracks - D108 (Building D)			
11:10 - 13:10	Paper Session 9 - (Artificial Intelligence / Machine Learning)	Chairs: Serdar Ulusoy & Adil Akgül	
11:10 - 11:40	Session 9 Invited keynote	Yavuz Murtezaoğlu (Module Works), remote	*CAM software development: Geometric algorithms for manufacturing*
11:40 - 12:00	Session 9 talk 1	Erdem Onur Özyurt (Turkish German University), in person	*False star filtering and camera motion estimation using an unsupervised learning method with morphological attributes*
12:00 - 12:20	Session 9 talk 2	Ali Ömer Baykar (Turkish German University), in person	*Comparison of feature detection methods in visual localization*
12:20 - 12:50	Session 9 talk 3	Mukden Uğur (Turkish German University), in person	*Effects of boron compounds on the electrical properties of polyester samples*
12:50 - 13:10	Session 9 talk 4	Arda Çetiner (Turkish German University), in person	*Design of an experimental setup for investigating UAV propeller icing*
Wednesday, 01.11.2023 Track 2 of 2 parallel Tracks - C108 (Building C)			
11:10 - 13:10	Paper Session 10 - (Artificial Intelligence / Machine Learning)	Chair: Roman Henze	
11:10 - 11:40	Session 10 Invited Keynote 1	Karsten Berns (University of Kaiserslautern), remote	*Human-robot interaction*
11:40 - 12:00	Session 10 talk 1	Adil Akgül (Turkish German University), in person	*On use of it technologies in wildfire prevention and fighting technologies: A review of current status and future challenges*
12:00 - 12:20	Session 10 talk 2	Henning Jürgen Meyer (TU Berlin), remote	*Applications of digitalisation in mobile machines*
12:20 - 12:50	Session 10 Invited Keynote 2	John Erkoyuncu (Cranfield University), remote	*Automation of knowledge extraction for degradation analysis*
12:50 - 13:10	Session 10 talk 3	Maximilian Flormann (Technical University of Braunschweig), remote	*The internet of vehicles - conneted driving for urban scenarios*
13:10 - 13:30	Closing of Conference		