SEA AI

Artificial Intelligence and Sea

THE 10TH HAIFA CONFERENCE ON MARINE SCIENCES

20.06.2023 | University of Haifa

PROGRAM

08:00 Safdie Auditorium	**Gathering**		
08:50 Safdie Auditorium	**Opening** Chair: **Itzik Klein**, University of Haifa		
	Prof. Ron Robin, President of the University of Haifa		
	Prof. Ilana Berman-Frank, Director, The Leon H. Charney School of Marine Sciences, University of Haifa		
09:00 Safdie Auditorium	**Keynote 1** Chair: **Ilana Berman-Frank**	**Prof. Paul G. Falkowski, Rutgers** The State University of New Jersey	The evolution of oxygen and other emergent properties
09:50 Safdie Auditorium	**Keynote 2** Chair: **Roee Diamant**	**Prof. Mandar Chitre** National University of Singapore	The role of differentiable physics-based models in ocean acoustics
10:40 -10:50	**Break/Posters**		
10:50-12:20 Safdie Auditorium	**Session 1: AI in marine technology** (Parallel sessions) Chair: **Oren Gal**		
	Matan Yuval, Tali Treibitz, University of Haifa		3D Imaging for Coral Reef Ecology
	Izhak Fabian, Amir Dayan, Nir Zagdensky, Tali Treibitz, University of Haifa		Self-Supervised Cross-View Cross-Modal Object Attention
	Rami Zghyer, Coastal and Marine Engineering Research Institute		Hybrid Hydrodynamic Model for Maneuvering Simulation and Prediction in Operational Conditions.
	Ole Johannes Sørensen et al, University of Haifa		Benthic habitat classification from synthetic aperture sonar and its application for ecological modeling
	Ilan Git, Matan Samina, Shachar Givon, Moshe Kiflawi, Ronen Segev, Ohad Ben-Shahar, Ben-Gurion University of the Negev		Real-time Tracking of Marine Targets Using a Single Moving Autonomous Receiver and AI
	Oren Gal, Technion—Israel Institute of Technology		Spatial Visibility Trajectory Planning Using Inverse Reinforcement Learning
10:50-12:20 Room 223, 2nd floor, Multi-Purpose Building	**Session 2: AI in marine sciences** (Parallel sessions) Chair: **Aviv Solodoch**		
	Aviv Solodoch, Andrew L. Stewart, Andre McC. Hogg, Georgy E. Manucharyan, University of California in Los Angeles and Hebrew University		Feasibility Test of Overturning Circulation Inference from Satellite Observables using Machine Learning
	Tamar Guy-Haim, Khristina Ermak, Noa Aviv, Merav Gilboa, Arseniy Morov, Israel Oceanographic and Limnological Research Institute		Using Machine Learning to Monitor Plankton in the Mediterranean Sea
	Itamar Avishay, Steve Brenner, Bar Ilan University		K-Means Clustering for Identification of Recurring Circulation Patterns in the major Levantine Basin Water Masses
	Tomer Sagi, Yoav Lehahn, University, Aalborg and University of Haifa		The Ocean Data Integration Initiative (ODINI): Status and Future Plans
	Yizhak Feliks, Aviv Solodoch, Hezi Gildor, Hebrew University of Jerusalem		The spatial structure of ISO modes in the sea and atmosphere in the Eastern Mediterranean
	Tomer Antman, David Zeevi, Weizmann Institute of Science		Quantifying microbial growth dynamics in uncharacterized environments
12:20 – 12:30	**Break/Posters**		
12:30-13:30 Safdie Auditorium	**Session 3: Invited Session on Core AI** (Parallel sessions) Chair: **Daniel Sher**		
	Michael Erlihson, Salt Security		Generate any visual data with Text2Image diffusion models
	Yakov Miron, Robert Bosch Technologies and University of Haifa		A short introduction to the fundamentals of reinforcement learning
	Chaim Baskin, Technion—Israel Institute of Technology		Learning from limited and imperfect data
12:30-13:30 Room 223, 2nd floor, Multi-Purpose Building	**Session 4: Sea challenges 1** (Parallel sessions) Chair: **Derya Akkaynak**		
	Talmon Alexandri, Roee Diamant, University of Haifa		Characterization of Shipping Underwater Radiated Noise
	Yuri Katz, Morel Groper, University of Haifa		On the development of a mid-depth Lagrangian float for littoral deployment
	Guy Gubnitsky, Roee Diamant, University of Haifa		Discriminative features for sperm whale clicks detection
	Yevgeni Gutnik, Morel Groper, University of Haifa		AUV Close-Range Localization and Guidance Employing an Electro-Magnetic Beacon
13:30 – 14:40	**Lunch Break/Poster Session**		

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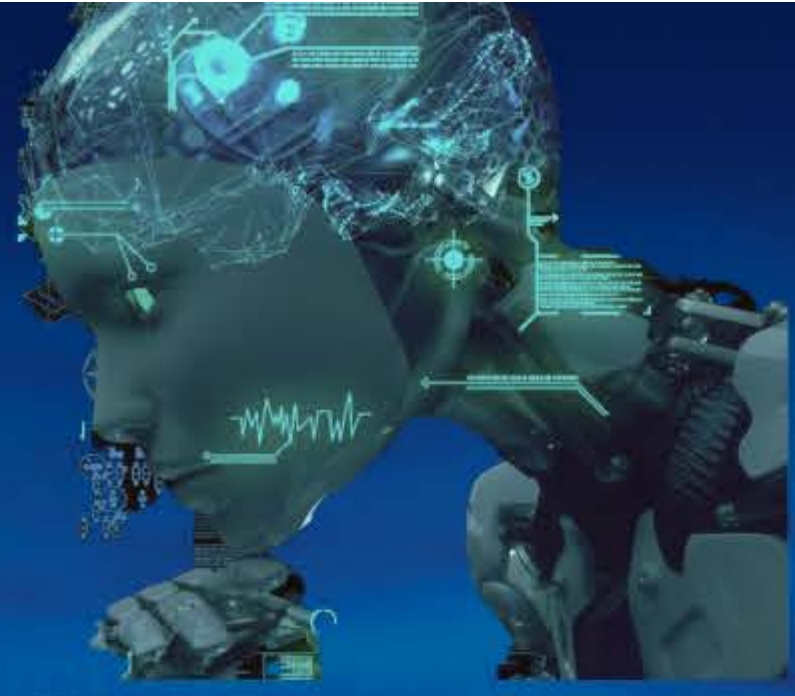

PROGRAM

14:40 Safdie Auditorium	Keynote 3 Chair: **Sharon Avrashi Weizman**	**Prof. Yaniv Romano,** Technion-Israel Institute of Technology	Uncertainty quantification in modern machine learning
15:30-16:30 Safdie Auditorium	**Session 5** (Parallel sessions) **Special Session: Model and learning methods for autonomous underwater vehicle navigation** Chair: **Nadav Cohen**		
	Nadav Cohen, Itzik Klein, University of Haifa		The BeamsNet Series: Data-Driven Methods for Improving Autonomous Underwater Vehicles' Navigation
	Mor Yona, Itzik Klein, University of Haifa		MissBeamNet: Learning Missing Doppler Velocity Log Beam Measurements
	Zeev Yampolsky, Itzik Klein, University of Haifa		DVL calibration using neural networks
	Kobi Libero, Itzik Klein, University of Haifa		DVL-based acceleration aided INS
15:30-16:30 Room 223, 2nd floor, Multi-Purpose Building	**Session 6: Sea challenges 2** (Parallel sessions) Chair: **Talmon Alexandri**		
	Osnat Weissberg, Daniel Sher, University of Haifa		From Genomes To Oceans: Challenges In Understanding The Lives Of Marine Cyanobacteria
	Grigory Solomatov, Derya Akkaynak, University of Haifa		Spectral Sensitivity Estimation Without a Camera
	Semion Polinov, Oren Elmakis, Amir Degani, Coastal and Marine Engineering Research Institute		UAV-USV system for marine monitoring tasks
	Noam Ginio, Michael Lindenbaum, Barak Fishbain, Dan Liberzon, Technion—Israel Institute of Technology		Efficient machine learning method for spatio-temporal water surface waves reconstruction from polarimetric images
16:30-17:00 Safdie Auditorium	**Closing and award ceremony** Chair**: Itzik Klein**, University of Haifa		