

# Space & AI @ ECAI2020, 4 SEP 2020: Schedule

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## Session 1: AI & Space Exploration (Sess. chair: Sašo Džeroski, JSI & ESA/ESRIN PhiLab)

Starts at 09:00

K1: 20'+6	Machine Learning for Space and Planetary Exploration	Kiri Wagstaff	NASA/JPL, US
P1: 10'+3	GALAXAI: MACHINE LEARNING FOR SPACECRAFT OPERATIONS	Matej Petković	BVLabs/IJS, Slovenia
P2: 10'+3	ONBOARD AND GROUND-BASED AUTOMATED SCHEDULING FOR THE MARS 2020 ROVER MISSION	Steve Chien	Caltech, US
P3: 10'+3	Using flexible execution, replanning, and model parameter updates to address env. uncertainty for a planetary lander	Daniel Wang	JPL/Caltech, US
P4: 7'+3	ROVER TELEOPERATION THROUGH MACHINE COACHING	Loizos Michael	OUC/RISE, Cyprus
P5: 7'+3	ARTIFICIAL INTELLIGENCE POWERED CHATBOT FOR THE ASTRONAUTS	Anitha S Pillai	HITS, India
X1: 7'+3	Extending the autonomy envelope of space applications: a research path	Angelo Oddi	ISTC-CNR, Italy

## Session 2: AI & Earth Observation A (Sess. chair: Bertrand Le Saux, ESA/ESRIN PhiLab)

Starts at 10:40

K2: 20'+6	AI and Data Science in Earth Observation	Xiaoxiang Zhu	TUM/DLR, Germany
P6: 10'+3	AITLAS: A TOOLBOX OF AI METHODS TAILORED FOR EARTH OBSERVATION DATA	Ivica Dimitrovski	BVLabs/FINKI, Slovenia/North Macedonia
P7: 10'+3	TRANSCODING-BASED SELF-SUPERVISED LEARNING FOR SEMANTIC SEGMENTATION OF POLSAR IMAGERY	Ronny Hänsch	DLR, Germany
P8: 10'+3	SCALABLE BIG DATA AND DEEP LEARNING TECHNIQUES FOR COPERNICUS DATA	Manolis Koubarakis	UoAthens, Greece

## Session 3: AI & Earth Observation B (Sess. chair: Leon van der Torre, U of Luxembourg)

Starts at 12:00noon

P9: 7'+3	COMBINATION OF AI, SEMI-PHYSICAL MODELS, AND IN-SITU DATA FOR EARTH OBSERVATION APPLICATIONS	Mirta Pinilla	Starlab, Spain
P10: 7'+3	ROLE OF MACHINE LEARNING TECHNIQUES FOR SPATIAL INTERPOLATION OF ENVIRONMENTAL VARIABLES	Chorapalli Jayendra Praveen Kumar	ISRO, India
P11: 7'+3	CLUSTERING GEO-DATA CUBES	Raul Zurita-Milla	UoTwente, The Netherlands
P12: 7'+3	CLOUD REMOVAL FROM SATELLITE MULTISPECTRAL IMAGES USING EDGE FILTERED MCGAN	Andrzej Mizera	University of Luxembourg, Luxembourg
K3: 20'+6	AI, Space Data and the Promise of Improved Planetary Stewardship	James Parr	Trillium Tech., London, UK

#### Session 4: AI for Astronomy & Space Events (S.Ch.: Dragi Kocev, BV Labs/JSI)

Starts at 14:15

<b>K4:</b> 20'+6	<b>AI in Space in an Age of Deep Industrial Transformation</b>	<b>Lucien Rapp</b>	<b>University of Toulouse 1/HEC</b>
P13: 10'+3	SEPARATING STARS FROM QUASARS: MACHINE LEARNING INVESTIGATION USING PHOTOMETRIC DATA	Snehanshu Saha	BITS Pilani, India
P14: 10'+3	MACHINE LEARNING IN HELIOPHYSICAL APPLICATIONS: THE EXAMPLE OF UNSUPERVISED SOLAR WIND CLASSIFICATION	Jorge Amaya	KU Leuven, Belgium
P15: 7'+3	AIDA: AI DATA ANALYSIS WITH APPLICATION TO THE DETECTION AND PREDICTION OF SPACE EVENTS	Giovanni Lapenta	KU Leuven, Belgium
P16: 7'+3	A DEEP LEARNING APPROACH TO SPACE WEATHER PROXY FORECASTING FOR ORBITAL PREDICTION	Emma Stevenson	UP Madrid, Spain

#### Session 5: AI & Space - Present and Future (S.Ch.: Sašo Džeroski, JSI & ESA/ESRIN PhiLab)

Starts at 15:45

(Panel moderator: Cristiana Teixeira Santos, U of Luxembourg)

<b>20'+6</b>	<b>Artificial Intelligence in ESA: Vision, Strategy and Applications</b>	<b>Alessandro Donati</b>	<b>ESA/ESOC, Germany</b>
	<b>Panel: AI &amp; Space - The Present, Lessons Learned, and the Future</b>		
15'	Short position statements by the panel members	Maxime Puteaux Robert Zubrin George Anthony Long Claudia Muresan Jorge Del Rio Vera	Euroconsult Pioneer Astronautics Legal Parallax EC, DG DEFIS UNO OSA
44'	Panel discussion		

Keynote talks are shown in bold. The presentation ID (K=keynote, P=contributed presentation) and duration of each talk (presentation+questions) in minutes are listed first. The overall schedule is given below. All times are CEST = GMT/UTC + 2:00.

08:55	<b>Conference opening</b>	5' duration	no break
09:00 10:35	<b>Session 1: AI &amp; Space Exploration</b>	85' duration	5' break
10:40 11:45	<b>Session 2: AI &amp; Earth Observation A</b>	65' duration	15' break
12:00 13:06	<b>Session 3: AI &amp; Earth Observation B</b>	66' duration	69' lunch break
	LUNCH BREAK		
14:15 15:27	<b>Session 4: AI for Astronomy &amp; Space Events</b>	72' duration	18' break
15:45 17:10	<b>Session 5: AI &amp; Space - Present and Future</b>	85' duration	no break
17:10 17:15	<b>Conference closing</b>	5' duration	the end

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