

EarthCube RCN Workshop: Machine Learning in Heliophysics and Space Weather Forecasting: Advances, Perspectives and Synergies

16-17 January 2020, New Jersey Institute of Technology, Newark, New Jersey

Time	Activity	Presenter	Moderator	Time assigned (h:mm)	Location
Wednesday Evening 01/15/2020					
6:00 PM	Welcome Reception				Highlander Pub 3 Campus Center Third Floor
Day 1: Thursday 01/16/2020					
8:45 AM	Welcome Remarks	Gelu Nita, NJIT, Organizing Committee			Eberhardt 112
		Atam Dhawan, NJIT, Senior Vice Provost for Research			Eberhardt 113
		Janet Kozyra, NASA-HQ			Eberhardt 113
		Iliia Roussev, NSF			Eberhardt 114
9:20 AM	EarthCube Data Capabilities: Machine Learning Enhanced Cyberinfrastructure for Understanding and Predicting the Onset of Solar Eruptions	Haimin Wang	Gelu Nita	0:40	Eberhardt 112
10:00 AM	Physics-guided machine-learning approach in heliophysics	Alexander Kosovichev		0:20	Eberhardt 112
10:20 AM	Coffee Break			0:20	Eberhardt Lobby
10:40 AM	Long-term Solar-Terrestrial Data Sets: Is 40 years enough?	Andrew Gerrard	Vincent Oria	0:20	Eberhardt 112
11:00 AM	Current and evolving space weather research, forecasting and educational capabilities at the Community Coordinated Modeling Center	Yari Collado-Vega		0:20	Eberhardt 112
11:20 AM	Deep Learning in Heliophysics and Space Weather Forecasting	Jason Wang		0:40	Eberhardt 112
12:00 PM	Lunch Break			1:00	Lobby
1:00 PM	Using machine learning in the DKIST calibration pipeline and level 2 inversions	Alisdair Davey	Jason Wang	0:40	Eberhardt 112
1:40 PM	Machine learning models for segmentation of sunspots and coronal holes in solar disk images	Egor Illarionov		0:20	Eberhardt 112
2:00 PM	Toward Filament Segmentation Using Deep Neural Networks	Azim Ahmadzadeh		0:20	Eberhardt 112
2:20 PM	Voyage from Observations to Solar Activity Forecast through AI/ML and Data Assimilation	Irina Kittashvili		0:40	Eberhardt 112
3:00 PM	Coffee Break			0:20	Eberhardt Lobby
3:20 PM	Open Discussions	All	Enrico Camporeale	1:40	Eberhardt 112
5:00 PM	Adjourn				
6:30 PM	Group Dinner - Iberia Tavern & Restaurant				80 Ferry St, Newark, NJ 07105

Day 2: Friday 01/17/2020					
9:00 AM	Grey-box approach: combining physics and machine learning	Enrico Camporeale	Alexander Kosovichev	0:40	Eberhardt 112
9:40 AM	Tackling the technical and social challenges to data science-driven discovery and examples in space weather	Ryan McGranaghan		0:20	Eberhardt 112
10:00 AM	Do's and Don'ts of Data Integration for Space Weather Forecasting	Berkay Aydin		0:20	Eberhardt 112
10:20 AM	Coffee Break			0:20	Eberhardt Lobby
10:40 AM	On Clustering of Machine Learning Attempts in Heliophysics: Examples and General Picture	Viacheslav Sadykov	Rafal Angryk	0:40	Eberhardt 112
11:20 AM	Filling Gaps in 3D Modeling with Machine Learning	Gregory Fleishman		0:20	Eberhardt 112
11:40 AM	Statistical Clustering and Discrimination of UV/EUV brightness using a Generalized Spectral Kurtosis Image Variability Descriptor	Gelu Nita		0:20	Eberhardt 112
12:00 PM	Lunch Break			1:00	Eberhardt Lobby
1:00 PM	Overview of Solar Data Mining Activity at GSU	Rafal Angryk	Irinia Kitiashvili	0:40	Eberhardt 112
1:40 PM	Machine Learning for SEP Prediction at GSU	Petrus Martens		0:20	Eberhardt 112
2:00 PM	Harnessing the power of time series data with applications in SEP Events prediction and Solar Events Interpolation	Soukaina Filali Boubrahimi		0:20	Eberhardt 112
2:20 PM	Time Series Analysis of Solar Data	Ruizhe Ma		0:20	Eberhardt 112
2:40 PM	Fusing Space Weather Forecasting and Machine Learning in EarthCube's Framework: a Course of Action	Manolis Georgoulis		0:20	Eberhardt 112
3:00 PM	Coffee Break			0:20	Eberhardt 112
3:20 PM	Open Discussions	All	Manolis Georgoulis	1:30	Eberhardt 112
4:50 PM	Closing Remarks	Gelu Nita		0:10	Eberhardt 112
5:00 PM	END of Workshop				