

AstroInformatics 2019: The Final Agenda

Monday, June 24

Data Science and X-informatics

8:00	9:00		Registration, breakfast
9:00	9:15	Co-Chairs	Welcome + logistics
9:15	10:00	Umaa Rebbapragada	Tutorial: Machine Learning basics
10:00	10:30		Coffee break and posters
10:30	11:15	Dima Duev	Tutorial: Deep Learning
11:15	12:00	Matthew Graham	Tutorial: Time series analysis
12:00	1:15		Lunch
1:15	2:00	Anima Anandkumar	Opening Keynote: Artificial Intelligence
2:00	2:30	Tapio Schneider	Clouds, Climate, And Data-Informed Earth System Modeling
2:30	3:00	Lior Pachter	High-Dimensional Data Analysis In Astronomy And Biology
3:00	3:30		Coffee break and posters
3:30	4:00	Discussion	Astroinformatics and data science methodology sharing
4:00	4:45	Santiago Lombeyda	Tutorial: Data Visualization
4:45	5:00	George Djorgovski	A special announcement
5:00	6:00		Wine & Cheese, posters (Cahill lobby)
6:00	8:00		Conference dinner (Cahill patio)

Tuesday, June 25

Astroinformatics Methods and Applications

8:00	9:00		Registration, breakfast
9:00	9:30	Ajit Kembhavi	Applications of Deep Learning in Astronomy and Electron Microscopy
9:30	10:00	Ashish Mahabal	Deep Learning for classification in astronomy and biomedicine
10:00	10:15	Banafsheh Beheshtipour	Clustering Observational Data Using Deep Learning Network
10:15	10:30	Joshua Yao-Yu Lin	Hunting for dark matter substructures with neural networks
10:30	11:00		Coffee break and posters
11:00	11:30	Kai Polsterer	From Photometric Redshift to Improved Weather Forecasts: An Interdisciplinary View of Machine Learning in Astronomy
11:30	11:45	Giuseppe Longo	Star Formation Rates as a ML Problem: An Application to SDSS Data
11:45	12:00	Andres Galarza	Random Forest applied to the photometric survey JPLUS
12:00	12:30	Discussion	Interesting technology trends
12:30	1:30		Lunch
1:30	2:00	Andy Connolly	Looking Below the Noise - Asteroid Hunting With the LSST
2:00	2:15	Dima Duev	Deep learning for the Zwicky Transient Facility (ZTF): real/bogus classification and identification of fast-moving objects
2:15	2:45	Pavlos Protopapas	Physical Symmetries Embedded in Neural Networks
2:45	3:00	Stephen Portillo	Dimensionality Reduction of SDSS Spectra with Autoencoders
3:00	3:30		Coffee break and posters
3:30	4:00	Alberto Krone-Martins	Strongly Lensed Quasars: Where Entropy Meets Astrometry, Wavelets And Machine Learning
4:00	4:30	Peter Tino	Dynamical Systems as Feature Representations for Learning from Data
4:30	5:00	Discussion	Developing and sharing Astroinformatics curricula

5:00 6:00 Posters and informal discussions

Wednesday, June 26

Astroinformatics for Large Projects

8:00 9:00 Registration, breakfast

9:00 9:30 Rich Doyle JPL, Autonomy, and Data Science

9:30 10:00 Kiri Wagstaff Anomaly Detection And Explanation In Galaxy Observations From The Dark Energy Survey

10:00 10:15 Asad Khan Deep Learning at Scale for the Construction of Galaxy Catalogs in the Dark Energy Survey

10:15 10:30 Antonio D'Isanto ESCAPE to victory: building the infrastructure for next generation astronomy

10:30 11:00 Coffee break and posters

11:00 11:30 Bruce Bassett Scaling Towards Exabyte Science With The SKA

11:30 11:45 Tim Galvin Using a semi-supervised method for radio source classification using PINK

11:45 12:00 Erfan Nourbakhsh Managing scalable data workflows on HPC clusters

12:00 12:30 Discussion Astroinformatics and big projects: needs and drivers

12:30 1:30 Lunch

1:30 2:00 Matthew Graham Can We Predict the Future of Aperiodic Sources?

2:00 2:30 Francisco Forster The Universe in a Stream: Building the ALeRCE Broker

2:30 2:45 Manuel Pérez Adversarial variational transfer for semi-supervised domain adaptation

2:45 3:00 Vijay Varma Data-driven modeling of numerical relativity simulations.

3:00 3:30 Coffee break and posters

3:30 4:00 Jess McIver Noise Mitigation Methods For Gravitational Wave Detectors

4:00 4:15 William Wei Gravitational Wave Denoising of Binary Black Hole Mergers with Deep Learning

4:15 4:30 Kent Blackburn GWOSC: Gravitational Wave Open Science Center

4:30 5:00 Discussion Astroinformatics for the multi-messenger astronomy

5:00 6:00 Posters and informal discussions

Thursday, June 27

Methodology transfer, quantum computing, and looking ahead

8:00 9:00 Registration, breakfast

9:00 9:30 Dan Crichton Enabling Methodology Transfer for Scientific Analysis from Space Science to Biomedicine

9:30 10:00 Various Poster paper summaries

10:00 10:30 Discussion Developing the Astroinformatics community and the career issues

10:30 11:00 Coffee break and posters

11:00 11:45 John Preskill Closing Keynote: Quantum Computing: Reality vs. Hype

11:45 12:15 Organizers Conference wrap-up, best student paper award, and a preparation for the hackathon

12:15 1:30 Lunch

1:30 ? Hackathon part 1
Ends when the participants want. Coffee and pizza will be provided.

Friday, June 28

The hackathon wrap-up

9:00 12:00 Hackathon part 2

12:00 1:00 Lunch Pizza will be provided

1:30 ?

Hackathon wrap-up, teams report, plans for the future
The hackery can continue for as long as the participants wish.

Notes:

Invited talks are intended to be 25+5 min, contributed talks 12+3 min
The ideas for the hackathon to be developed by the participants during the first 3 days of the conference
Coffee breaks in the Cahill lobby and back patio. Lunches and the conference dinner on the back patio.

Posters:

Carlos Barbosa	Using probabilistic programming to study stellar populations of galaxies.
Marco Canducci	Clustering compact-binary objects in the parameter space
	Multiple Band Probabilistic Cataloging: A Joint Fitting Approach to Source
Richard Feder	Detection and Deblending
	Crowdsourcing to GPUs: semi-automated classification of radio morphologies
Erica Hopkins	for 946,419 sources in FIRST with 299,266 IR counterparts in UKIDSS
	Autoencoders and Quasar Emission Lines: Using New Techniques to Solve
Collin McLeod	an Old Problem
David Wang	Application of ML and VR Data Science Tools to Astronomy