

# 2012 CONFERENCE ON INTELLIGENT DATA UNDERSTANDING

Boulder, CO | October 24-26, 2012

## Wednesday, Oct 24

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| <b>8:00</b>  | Registration & Breakfast   |  |
| <b>8:45</b>  | <b>Opening Remarks</b>   | <b>Ashok Srivastava &amp; Nitesh Chawla</b>  |
| <b>9:00</b>  | <b>Invited Talk: Big Earth – Big Data!</b>   | <b>Bill Mahoney, NCAR</b>                    |
| <b>10:00</b> | Coffee Break   |  |
| <b>10:30</b> | <b>Invited Talk: Learning Predictive Models from Large Distributed Autonomous Data Sources</b> | <b>Vasant Honavar, NSF CISE / Iowa State</b> |

## Session 1

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| <b>11:30</b> | Estimation and Bias Correction of Aerosol Abundance using Data-driven Machine Learning and Remote Sensing | Nabin Malakar, David Lary  |
| <b>11:50</b> | Introduction to astroML: Machine Learning for Astrophysics  | Jacob Vanderplas, Andy Connolly, Zeljko Ivezic, Alex Gray  |
| <b>12:10</b> | Time Series Change Detection using Segmentation: A Case Study for Land Cover Monitoring                   | Varun Mithal, Zach O'Connor, Karsten Steinhäuser, Shyam Boriah, Vipin Kumar, Christopher Potter, Steven Klooster |
| <b>12:30</b> | Lunch (included)  |  |
| <b>2:00</b>  | <b>Invited Talk: Chaos, Computers, and Nonlinear Dynamics</b>   | <b>Liz Bradley, University of Colorado</b>   |

## Session 2

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| <b>3:00</b> | Learning Ensembles of Continuous Bayesian Networks: An Application to Rainfall Prediction | Scott Hellman, Amy McGovern, Ming Xue                                |
| <b>3:10</b> | Mining Time-lagged Relationships in Spatio-Temporal Climate Data                          | Jaya Kawale, Stefan Liess, Vipin Kumar, Upamanu Lall, Auroop Ganguly |
| <b>3:20</b> | Data Understanding using Semi-Supervised Clustering                                       | Vasudha Bhatnagar, Rashmi Dobriyal, Priya Jain, Ashish Mahabal       |
| <b>3:30</b> | Coffee Break  |  |

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| <b>4:00</b> | <b>Invited Talk: Experiences from Modeling and Exploiting Data in Air Traffic Control</b> | <b>James Kuchar, MIT Lincoln Laboratory</b> |
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### Thursday, Oct 25

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| <b>8:30</b> | Registration & Breakfast |
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| <b>9:00</b> | <b>Invited Talk: Investigation of the Climate System Using Earth System Models</b> | <b>Marika Holland, NCAR</b> |
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| <b>10:00</b> | Coffee Break |
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### Session 3

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| <b>10:30</b> | EddyScan: A Physically Consistent Ocean Eddy Monitoring Application | James Faghmous, Luke Styles, Varun Mithal, Shyam Boriah, Stefan Liess, Frode Vikebø, Michel dos Santos Mesquita, Vipin Kumar |
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| <b>10:50</b> | Data Visualization Techniques for Airspace Flow Modeling | Aude Marzuoli, Christophe Hurter, Eric Feron |
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| <b>11:10</b> | Hierarchical Structure of the Madden-Julian Oscillation in Infrared Brightness Temperature Revealed through Nonlinear Laplacian Spectral Analysis | Dimitris Giannakis, Wen-wen Tung, Andrew Majda |
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| <b>11:30</b> | <b>Invited Talk: Juno: Mission to Jupiter's Interior - and Poles</b> | <b>Fran Bagenal, Colorado</b> |
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| <b>12:30</b> | Lunch (included) |
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### Session 4

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| <b>2:00</b> | Aircraft FOQA using Performance Models Trained on Large Scale Fleet Data | Rodney Martin, Dmitry Gorinevsky, Bryan Matthews |
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| <b>2:20</b> | Detection and Characterization of Non-Transiting Extra-Solar Planets in Kepler Data using Reflected Light Variations | Kevin Knuth, Ben Placek, Zachary Richards |
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| <b>2:40</b> | Species Distribution Modeling and Prediction: A Class Imbalance Problem | Reid Johnson, Nitesh Chawla, Jessica Hellmann |
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| <b>3:00</b> | Coffee Break |
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| <b>3:30</b> | <b>Invited Talk: Big Data from the Galactic Planetary Census</b> | <b>Greg Laughlin, UC-Santa Cruz</b> |
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### Session 5

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| <b>4:30</b> | Improved Interferometric Synthetic Aperture Radar Processing via Advanced Co-registration and Phase Correction Techniques | Mozhdeh Shahbazi, Mahdi Motagh |
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| <b>4:40</b> | Characterization of Traffic and Structure in the U.S. Airport Network | Vineet Mehta |
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| <b>4:50</b> | Analyzing Chemical and Biological Sensors and Sensor Detection Algorithms in the Context of Operational Decisions | Paul E. Bieringer, Andrew J. Annunzio, George Bieberbach, Ryan Cabell |
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| <b>5:00</b> | <b>Poster Introductions</b> |  |
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| <b>5:15</b> | <b>Poster Session &amp; Reception</b> |  |
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### Friday, October 26

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| <b>8:30</b> | Registration & Breakfast |  |
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| <b>9:00</b> | <b>Invited Talk: Big-Data Enabling Usable Climate Science and Services for Society at the Petascale</b> | <b>Lawrence Buja, NCAR</b> |
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| <b>10:00</b> | Coffee Break |  |
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### Session 6

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| <b>10:30</b> | Machine Learning Enhancement of Storm Scale Ensemble Precipitation Forecasts | David Gagne, Amy McGovern, Ming Xue |
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| <b>10:50</b> | A New Data Mining Framework for Forest Fire Mapping | Xi Chen, Anuj Karpatne, Yashu Chamber, Varun Mithal, Michael Lau, Karsten Steinhaeuser, Shyam Boriah, Michael Steinbach, Vipin Kumar, Christopher Potter, Steven Klooster, Teji Abraham, JD Stanley, Juan Carlos Castilla-Rubio |
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| <b>11:10</b> | A Technique to Improve the Quality of Accumulated Fields | Valliappa Lakshmanan, Madison Miller, Travis Smith |
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| <b>11:30</b> | Importance of Vegetation Type in Forest Cover Estimation | Anuj Karpatne, Mace Blank, Michael Lau, Shyam Boriah, Karsten Steinhäuser, Michael Steinbach, Vipin Kumar |
| <b>11:50</b> | <b>Closing Remarks</b>                                   | <b>Ashok Srivastava &amp; Nitesh Chawla</b>   |
| <b>12:00</b> | Conference Ends  |   |

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