UW Data Science in Engineering Poster Session

March, 15 2016 3:00-5:00pm

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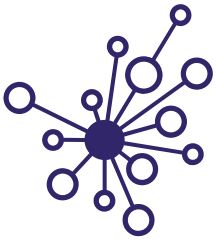

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eScience Institute

ADVANCING DATA-INTENSIVE DISCOVERY IN ALL FIELDS

Welcome to the **UW Data Science in Engineering Poster Session!**

This two-hour event will feature the work of approximately 60 students in courses that utilize data science techniques and tools. Students will present projects that use visualization, machine learning and statistical analyses to explore data from Google Earth, bioreactors, functional MRI, historical ship logs, and more!

Rapid advances in technology are transforming nearly every field from "data-poor" to "data-rich." The ability to extract knowledge from this abundance of data is the cornerstone of 21st century discovery. At the University of Washington eScience Institute, our mission is to engage researchers across disciplines in developing and applying advanced computational methods and tools to real world problems in data-intensive discovery.

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CONTRIBUTED POSTERS

1. **A Study Of Air Temperature Variations in the Pacific Northwest Using Principal Component Analysis (PCA) and Dynamic Mode Decomposition (DMD)**

   Authors: James M. Penna and Derek A. Sutherland
   Contact: das1990@uw.edu

2. **Analyzing Intermediate- and Long-Term Stability of Natural Slopes Using Dynamic Mode Decomposition of LiDAR Data**

   Authors: Kamal Ahmed, Andrew Makdisi and Krishnendu Shekhar
   Contact: ajmakdisi@gmail.com

3. **Application of Compressed Sensing to Simulated Chemical Spectra**

   Authors: Camille Hourferak, Joe Kasper, Joseph J. Radler and Shichao Sun
   Contact: jjradler@uw.edu

4. **Bacteria Community Dynamics in a Methane Oxidizing Community**

   Authors: Yuan Gao, Saghar Husseini, Janet Matsen and Pearl Philip
   Contact: jmatsen@uw.edu

5. **Bioreactor Data Management and Automation**

   Authors: Alex Barysher, Kathryn Cogert, Alexey Gilman and Michael Newton
   Contact: gilmana@uw.edu

6. **Characterization of human centromeres using single-molecule sequencing**

   Authors: Sira Kasinathan and Steven Herikoff
   Contact: skasin@uw.edu

7. **Classifying Documents Using Nonnegative Matrix Factorization**

   Authors: Brian de Silva
   Contact: bdesilva@uw.edu

8. **Classifying mechanosensory neurons Hawkmoth wings**

   Authors: T. L. Daniel , Thomas Mohren and B. Pratt
   Contact: tlmohren@uw.edu

9. **Data Science in Predictive Manufacturing**

   Authors: Steven Braton, Kam To Law and Krithika Mandhar
   Contact: lawk@uw.edu

10. **Deconvolution of Mixed Signals**

    Authors: Yifei Guan and Harikrishnan Murali
    Contact: harikm@uw.edu

11. **Digital Recognization**

    Authors: Ziyifag, Xingjianr Jiang, Yimin Yang and Qiubao Ye
    Contact:

12. **Dimensionality Reduction and Characterization of the Human Neural Response to Subdural Direct Electrical Cortical Stimulation**

    Authors: David Caldwell and Jeneva Cronin
    Contact: djcald@uw.edu

13. **Dynamic Mode Decomposition for Magnetically Confined Fusion Plasmas**

    Authors: Roy Taylor
    Contact: rktaylor@uw.edu

14. Dynamic Mode Decomposition for the Prediction of Wind Turbine Performance

Authors: Ken Koelling, Brian Leege and Eric Wheeler
Contact: kendude@uw.edu

15. Dynamics of Coupled Oscillators

Authors: Stephen French and Chang Sun
Contact: sunch610@uw.edu

16. Exploring natural modes of variability in North Pacific storminess

Authors: John Christian
Contact: jemc2@uw.edu

17. Grain Boundary Characterization of FCC Crystal Based on Atomic Positions from Molecular Dynamic Simulations

Authors: Hang Hu and Taichong Ma
Contact: taichong@uw.edu

18. Graphically exploring diffusion of brain-penetrating nanoparticles

Authors: Ched Curtis, Ian Faulkner and Rich Liao
Contact: idf@uw.edu

19. High Dimensional Sensitivity Analysis – Toolkit

Authors: Chris Fu, Blake Hough and Swapil Pahiwal
Contact: swapil@uw.edu

20. Impact of Weather on American Fiscal Strength

Authors: Derek Klock
Contact: dklock@uw.edu

21. Investigation of Acoustic Emission Data using Unsupervised Clustering techniques.

Authors: Jasper Marek
Contact: jmarek@uw.edu

22. Magnetic Resonance Imaging K-Space Reconstruction via Fourier Analysis in ADNI dataset

Authors: Yan Jin
Contact: yanjin@uw.edu

23. Mapping River Carbon in the Cloud with Google Earth Engine

Authors: Ziyi Feng, Will Gayne-Maynard, Rosin Gold and Catherine Kuhn
Contact: ziyif@uw.edu

24. Mixing Magnetic Cilia: Post Processing Analysis

Authors: Kayla Fakade, Yau Lueng Ng, Chih-wei Wang and Feihong Yi
Contact:

25. Morphology of Polygonal Patterned Ground in Farnell Valley, Antarctica

Authors: Nicolas Cuozzo and Benjamin Mishkin
Contact: bamish@uw.edu

26. Multimedia Feature Generation of Movie Trailers for Genre Prediction

Authors: John Fuini, Nathaniel Guy and Yong Han Noel Kim
Contact: natguy@uw.edu

27. Noise Reduction Methods for Langmuir Probe Data

Authors: Nao Murakami
Contact: naom@uw.edu

28. Operational Modes of a Spinning Detonation Engine

Authors: Ryan Conelly, James Koch and Randon Vizmura
Contact: jvkoch@uw.edu

29. PARAFAC Analysis of Fluorescent EEM Spectra

Authors: Jay Rutherford
Contact: jayruth@uw.edu

30. Predicting Athletic Outcomes with Machine Learning

Authors: Ali Brauer and Dallas Gosselin
Contact: abrauer@uw.edu

31. Predicting NFL Player Performance and Draft Position Using Combine Measurables

Authors: Long Chen, Melaku Dubie, Rich Lee and Kiran Polimis
Contact: richjlee@uw.edu

32. Predicting the selling price of houses in King County using a regression tree analysis

Authors: Maria Isabel Preciado
Contact: marisa_preciado@hotmail.com

33. Prediction of FX time series using time-frequency analysis and classification

Authors: Osman Asif Malik
Contact: osmanm@uw.edu

34. Principal Component Analysis for Semantic Classification

Authors: Kelsey Maass , Benjamin Liu and Riley Molloy
Contact: benliu@uw.edu

35. Quick test of chemicals in biorefinery process using Raman spectroscopy

Authors: Chang Dou and Shi Lin Yuan
Contact: changdou@uw.edu

36. Recognition of the Handwritten Digits using MNIST Database

Authors: Peiqi Wang
Contact: wangpq@uw.edu

37. RPCA, Filtering and DMD for Engineering Data Analysis Applications

Authors:, Elaine Leung, Andrea Willson and Tess Young
Contact: try4@uw.edu

38. Selection of Sample Days for Approximating the Net Load in Generation Planning Problems

Authors: Atinuke Ademola-Idowu and Abeer Almaimouni
Contact: maimouni@uw.com

39. Spike Sorting Algorithm

Authors: Bin Yu
Contact: by23@uw.edu

40. Studying the Slave Trade using Ship Logbooks

Authors: Alicia Clark, Emma Cotter and Zehua Wei
Contact: clarka34@uw.edu

41. Testing the Robustness of Prehistoric Ecosystems

Authors: Savannah Olroyd
Contact: savano@uw.edu

42. The Classification of Style in Fine-Art Painting

Authors: Kenan Li, Beier Lu and Shuang Wu
Contact: beier_schneider@yahoo.com

43. The Rain in Spain stays Mainly in Ukraine! (Geographic Trends in Precipitation, 1903-2013)

Authors: Siavash Alemzadeh, Mathias Hudoba de Badyn and Chirstopher Everson
Contact: sa91137@uw.edu

44. Tracking Motion of Pancake Ice

Authors: Tysen Mulder and Madison Smith
Contact: mmsmith@uw.edu

45. Video Filtering via Conventional Feature Detection Algorithms for 3-D Construction of Human Organs

Authors: Mark Chang
Contact: mark1993@uw.edu

46. Voice Classification via Linear Discriminant, Naive Bayes, and SVM

Authors: Corey Crisp, Veniamin Stryzheus and Veniamin Tereshchuk
Contact: stryzheusben@gmail.com

47. Crash Data Analysis Tool

Authors: John Ash, Hongyuan Lin and Wenbo Zhu
Contact:

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