



DEPARTMENT OF COMPUTER SCIENCE

Faculty of Mathematics & Computer Science

South Asian University, Akbar Bhawan

Chanakyapuri, New Delhi-110021

Summer Training on Regression and Deep Learning (RDL'18)

June 11-12, 2018

Website: www.sau.ac.in/~rdl18/index.php

SPEAKER:

Prof. Mohammed J. Zaki, Department of Computer Science, RPI, NY, USA

Homepage: <http://www.cs.rpi.edu/~zaki/>

SUMMARY:

In this training, we will be going over the basics of regression and deep learning. We will start with linear regression, and then consider logistic regression. We will move on to artificial neural networks and deep learning. The focus will be on the underlying concepts, mathematics, and algorithms.

SYLLABUS:

1. Linear Regression: Ordinary Least Squares, Multiple Regression, Kernel Regression, L1 Regression
2. Logistic Regression: Binary and Multi-class Regression
3. Neural Networks: Multilayer Perceptrons (MLPs), Backpropagation
4. Recurrent Neural Networks (RNNs): RNNs, Backpropagation in Time, Bidirectional RNNs
5. Gated RNNs: Long short-term memory (LSTM), Gated Recurrent Units (GRU)
6. Convolutional Neural Networks (CNNs): Convolutions, Activations, Deep CNNs
7. Evaluation: Regression Modelling, Assessment

PRE-REQUISITES:

It assumes some familiarity with Linear Algebra, and Probability and Statistics.

REFERENCES:

- Ian Goodfellow, Yoshua Bengio, Aaron Courville, Deep Learning, MIT Press, 2016.
- Mohammed J. Zaki, Wagner Meira, Jr., Data Mining and Analysis: Fundamental Concepts and Algorithms, Cambridge University Press, 2014.

SCHEDULE :

11.06.2018: (DAY 1)

8:30 AM: Registration-kit collection, tea, and networking

9:20 AM: A brief introduction to SAU & overview of RDL'18

9:30 AM: Technical Session-1

12:15 PM: Lunch break

1:30 PM: Technical Session-2

4:00 PM: Tea break and networking

4:30 PM onwards: Interactions with Data Science & Analytics research group members

12.06.2018: (DAY 2)

9:00 AM: Tea and networking

9:30 AM: Technical Session-3

12:00 Noon: Discussion with participants

1:00 PM: Lunch break & Certificate/Fee-receipt collection

SHORT BIOGRAPHY OF THE SPEAKER:



Mohammed J. Zaki is a Professor of Computer Science at RPI. He received his Ph.D. degree in computer science from the University of Rochester in 1998. His research interests focus on developing novel data mining and machine learning techniques, especially for applications in text mining, social networks and bioinformatics. He has over 250 publications, including the Data Mining and Analysis textbook published by Cambridge University Press, 2014. He is the founding co-chair for the BIODDD series of workshops. He is currently an associate editor for Data Mining and Knowledge Discovery, and he has also served as Area Editor for Statistical Analysis and Data Mining, and an Associate Editor for ACM Transactions on Knowledge Discovery from Data, and Social Networks and Mining. He was the program co-chair for SDM'08, SIGKDD'09, PAKDD'10, BIBM'11, CIKM'12, ICDM'12, IEEE BigData'15, and CIKM'18. He is currently serving on the Board of Directors for ACM SIGKDD. He received the National Science Foundation CAREER Award in 2001 and the Department of Energy Early Career Principal Investigator Award in 2002. He received an HP Innovation Research Award in 2010, 2011, and 2012, and a Google Faculty Research Award in 2011. He is an ACM Distinguished Scientist and a Fellow of the IEEE. His research is supported in part by NSF, NIH, DOE, IBM, Google, HP, and Nvidia.
