

2019 AI Conference Workshops Information



Workshop #1: Deep Learning with TensorFlow

Presenter: [Dr. Anurag Nagar](#), Computer Science faculty, Erik Jonsson School of Engineering & Computer Science, UT Dallas

Prerequisite(s): None, basic knowledge of Python will help.

This workshop will introduce participants to TensorFlow (TF), which is an open source, high performance library developed by Google. We will start with architecture of deep networks, cover the basics of TensorFlow using native and high level APIs, such as Keras. Finally, we will present various applications of TensorFlow, such as Convolution Neural Networks (CNN), Recurrent Neural Networks, and autoencoders. We will have lab sessions using cloud based resources, so no installation or setup is needed and we can start coding right away. Bring your laptops and have fun learning one of the most valuable tools in Data Science.

Dr. Anurag Nagar is a faculty member of the Computer Science department at UTD. He has wide experience in industry as well as academics in the areas of Machine Learning and Big Data technologies. He has conducted a number of workshops and tutorials for corporations, and university students.



Workshop #2: Machine Learning with Python

Presenter: [Nikhil Pareek](#), CS graduate student, Erik Jonsson School of Engineering & Computer Science, UT Dallas

Prerequisite(s): Comfortable with Python programming

Please install Anaconda Python distribution & Synder IDE before coming to this workshop.

Following topics will be covered with hands-on examples:

- Introduction to ML libraries such as Numpy, Pandas, Matplotlib and also, scikit-learn. This will include working on some hands-on examples using the above-mentioned libraries to load, process and visualize some sample datasets.
- Vectorization is essential in Machine Learning with Python to optimize codes and we will learn techniques such as Reshaping and Broadcasting.
- The concept of computation graphs in Neural Networks and TensorFlow.
- Theory of Neural Networks
- Image Classification with CNN: This would be a hands-on example of image classification with the MNIST data set ([handwritten notes](#)).

Nikhil Pareek is a CS graduate student at UT Dallas. He is interested in the application of ML in the field of Neuro-Imaging and currently working at the Neurobiology of Memory Laboratory as a Research Assistant with Dr Christ McIntyre at the School of Behavior and Brain Sciences at UTDallas. Before coming to UTDallas, he worked as a Junior Research Fellow at the Indian Institute of Science, India and co-authored a publication in a peer-reviewed journal, Royal Society of Chemistry-Advances.



Workshop #3: Analytics with MS Excel

Presenter: [Dr. Kannan Ramanathan](#), Jindal School of Management, UT Dallas

Prerequisite(s): Basic operations in MS Excel

Following topics will be covered with hands-on examples: The workshop will begin with a quick poll to determine which 6 or 7 topics from the following would be of most interest.

(1) Absolute & Relative Reference, (2) Reference - Vlookup Function, (3) Reference - Index Function, (4) Reference - Match Function, (5) Conditional Formatting, (6) Data Validation, (7) One-Way & Two-Way Data Tables, (8) Goal-Seek, (9) Pivot Tables. Please note the use of cellphones is not allowed when the workshop is in session.

Dr. Ramanathan studied Economics and Management in India. After getting his MBA, he worked for airlines in India, East Africa, and the Middle East. He quit the airline industry after 12 years, came to the United States, and got a Ph.D. in Business Management from the University of Illinois at Urbana Champaign. He is a certified Black Belt from General Electric where he focused on applying, and teaching, Six Sigma at various GE businesses. For the past ten years, he has been with the University of Texas at Dallas. Presently, he is Clinical Professor in the Jindal School of Management where he teaches Lean Six Sigma and Spreadsheet Modeling with Excel.