AKHILESH SANJAY SOMANI
Master of Science
University of Illinois at Urbana-Champaign

I am passionate about solving real-world problems using my experience in data science & analytics and my expertise in engineering.

TECHNICAL EXPERIENCE

Data Science Internship
Corteva Agriscience | May 2020 - Aug 2020

- Worked on predicting transgene expressions in genetically engineered crops
- Implemented & compared performances of statistical tools (regression) & machine learning models (neural network, decision tree, ensemble methods)
- Built an interactive R-Shiny dashboard to assist biologists before conducting experiments, to save time & money
- Used Kubernetes to run deep learning models on the GPU cluster

Data Science Projects
University of Illinois at Urbana-Champaign | Jan 2020 - May 2020

(1) Unsupervised Stool Sample Analysis for Liver Cirrhosis:
- Constructed Bayesian Networks from scratch to clean raw data
- Performed dimensionality reduction (PCA) & clustering (KMeans, GMM, Hierarchical) to successfully identify 20 abnormal microbes (out of 150)

(2) Data Analytics in High–Performance Computing Security:
- Implemented Hidden Markov Models & Factor Graphs to predict the likely state of the multi-stage attacks

(3) Quantitative Analysis of Stock Market:
- Accomplished feature engineering, PCA, LDA, and clustering for automated sector-identification of S&P 500 Index stocks
- Programmed Keras LSTMs to attempt to predict future stock prices

(4) Autonomous Vehicle (AV) Safety Analysis:
- Conducted statistical testings to compare AVs' performance with humans
- Developed Naive Bayes Model from scratch to predict, with over 80% accuracy, causes of failure under different conditions

Data Analytics Internship
University of California at Berkeley | May 2017 - Jul 2017

- Used Matlab to clean, process, and analyze data (captured from experiments on nanoscale protrusions of control resistors on hard disks) to derive a linear relation between protrusions and power input of the resistor

Computational Modeling and Optimization Project
University of Illinois at Urbana-Champaign | Jan 2020 - May 2020

- Implemented Genetic Algorithm and Co-variance Matrix Adaptation Evolution Strategy, modeled the underlying physics, and simulated & visualized the optimized motion of a slithering snake in Python

EDUCATIONAL HISTORY

University of Illinois at Urbana-Champaign - May 2021
Master of Science in Mechanical Engineering
- GPA: 3.91/4.0

Indian Institute of Technology (IIT) Bombay - Aug 2019
Bachelor of Technology in Mechanical Engineering, Minor in Computer Science
- GPA: 9.16/10.0

CONTACT ME AT

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- https://github.com/akhilesh-somani

SKILLS SUMMARY

- Python
- Data Science and Analytics
- Machine Learning
- Statistics
- Jupyter
- SQL
- R
- Kubernetes
- Matlab

KEY COURSES

- Data Science and Analytics
- Machine Learning
- Data Mining
- Data Science in Manufacturing Quality Control
- Data Analysis and Interpretation