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 (corn and soy) using machine learning
- Implemented & compared performances of various statistical tools (regression, regularization methods) and machine learning models (neural networks, decision trees, ensemble methods, KNN)
- 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) Autonomous Vehicle (AV) Safety Analysis:

- Conducted statistical testing to compare AVs' performance with humans, predicting an accident probability of 213X higher, implying AVs not yet ready
- Developed Naive Bayes Model from scratch to predict, with over 80% accuracy, causes of failure under different conditions

(2) 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 (from 150)

(3) Data Analytics in High-Performance Computing Security:

- Implemented Hidden Markov Models & Factor Graphs to predict the likely state of the multi-stage attacks
- Used Pyshark to parse raw data from network packets into analysis-friendly format, and identified attackers & legitimate users

(4) 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

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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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