DOOSOO YOON
DATA SCIENTIST

astrodoo@gmail.com
https://astrodoo.github.io/portfolio/ 319-512-5217
1028 Ryan CT, Iowa City, IA 52246, USA
doosoo eureka99 doosooyoon astrodoo

SKILLS

MACHINE LEARNING: classification, regression, clustering, forecasting, feature engineering
SOFTWARE AND PROGRAMMING LANGUAGE: Python (scikit-learn, numpy, scipy, pandas, pyspark, keras, dask, numba), SQL, Hadoop, Linux, Git, C++

SUMMARY

Dedicated and trained data scientist with a background in computational astrophysics: experienced in code development for numerical simulation in supercomputer clusters and the statistical pipeline for data analysis. I have developed state-of-the-art algorithms to understand the nature of black holes and their feedback to the surrounding medium. I've trained for 550+ hours in Bootcamp as a data scientist to reshape my knowledge and skillsets into machine learning and data analysis for industrial topics.

EMPLOYMENT

UNIVERSITY OF AMSTERDAM
Amsterdam, Netherlands
Postdoctoral Researcher
Sep. 2018 to Mar. 2022

Modeled the black hole physics and analyzed simulated data to evaluate black hole images
- developed and performed a GPU-enabled parallelized simulation code in supercomputer clusters.
- produced synthetic black hole images by using the ray-tracing algorithm and analyzed statistics of black hole features
- co-advised Ph.D. students and supervised a master's student at the University of Amsterdam

SHANGHAI ASTRONOMICAL OBSERVATORY
Shanghai, China
PIFI Research Fellow
Nov. 2015 to May 2018

- built a theoretical model of co-evolution between the black hole and its host galaxy and developed python tools to analyze statistics of the black hole feedback effects

UNIVERSITY OF WISCONSIN-MADISON
Wisconsin, USA
Research Assistant
Sep. 2009 to Aug. 2015

- designed and tested theoretical black hole jet models using state-of-the-art simulation
- developed python tools to analyze the statistics of the simulated jet features

PROJECTS

WEB TRAFFIC TIME SERIES FORECASTING
Dec. 2022 to Jan. 2023

- aimed to predict future web traffic for approximately a total of 145k Wikipedia articles to make better traffic control decisions.
- conducted feature engineering of time series data and built and evaluated forecasting models
- tools and algorithms: SARIMA / Prophet / LSTM
- results: The daily traffic has a strong weekly seasonality and we successfully predicted the next 60 days of traffic by the LSTM model.

WEST NILE VIRUS PREDICTION
Nov. 2022 to Dec. 2022

- aimed to build a model that predicts outbreaks of West Nile virus in mosquitos using the given environmental conditions, such as weather, season, and location in the City of Chicago
- managed highly imbalanced data by undersampling technique and solved binary classification by building models
- tools and algorithms: Logistic Regression / Random Forest / Bayes / SVM / K-Nearest Neighbors
- results: Given weather data, we successfully predicted the presence of viruses using the Random Forest model. The analysis revealed that wet and warm air could promote a favored environment for mosquito proliferation and thus the virus epidemic.

EDUCATION

Springboard Data Science Career Track
May 2022 to Feb. 2023

Certification 2023
8-month intensive course in data science, machine learning, Python and SQL.
Portfolio Projects: https://astrodoo.github.io/portfolio/

University of Wisconsin-Madison
Sep. 2009 to Aug. 2015

PhD, Astrophysics

Seoul National University
Mar. 2006 to Dec. 2008

Master of Science, Astrophysics

Seoul National University
Mar. 1999 to Dec. 2005

Bachelor of Science, Physics and Astronomy