

In Sung Jang

Research Data Scientist at UChicago

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Professional Experience

University of Chicago, Astronomy | Research Data Scientist

Nov 2020 - Present

- **Research and Engineering**
 - Implemented quantitative research methodologies to determine large-scale cosmological parameters
 - Developed non-parametric edge-detection algorithms, enhancing the precision of stellar distance measurements
 - Collaborated with international teams, leading to the analysis and publication of over 5 papers in Astrophysical Journals
- **Big data analysis**
 - Created end-to-end pipeline development in Python and SQL, effectively managing extensive datasets
 - Employed advanced statistical methods to uncover patterns and signals within extensive source catalogs (N > 1 million).
 - Reduced systematic errors by refining flux measuring algorithms, lowering errors by 2% from 10%

Leibniz Institute for Astrophysics Potsdam (Germany) | Post-doctoral researcher

2016 - 2020

- **Cloud Computing and Time series data analysis :**
 - Utilized supercomputers in Germany and S. Korea to perform photometric tests, significantly accelerating workflows
 - Extracted time-series photometric information from unstructured, pixelized raw data
 - Developed algorithms for the time-series analysis of variable stars, enabling the identification of transient phenomena

Skills and Qualifications

- **Machine Learning**
 - Certificates in Coursera specializations : (1) Deep Learning Specialization (Univ. of North Texas), (2) Python for Data science, AI & Development (IBM), and (3) SQL Basics for Data Science Specialization (Univ. of California)
 - Applied Python sklearn and pandas packages to real-world, often uncleaned and semi-structured data
- **Statistics:** Probability, Distributions, ML methods, Hypothesis testing
- **Programming languages:** Python, SQL, R, Matlab, IDL
- **Software:** Tableau, MS Office, equivalent Apple products, Linux/Terminal environment

Education

Seoul National University, Ph.D in Astronomy&Astrophysics

2009 - 2016

Inha University, BSc in Aerospace Engineering

2005 - 2009

Projects and Honors

Business Intelligence via Machine Learning

- Employed polynomial features and Linear Regression in Machine Learning to predict Chicago home prices using Zillow data
- Optimized bank marketing strategies through K-Nearest Neighbor classifiers, resulting in enhanced efficiency
- Leveraged Decision Tree algorithms to accurately forecast hotel booking demands

Kaggle Data Science projects

- Developed predictive models for various competitions, showcasing proficiency in machine learning and statistical analysis
- Continuously learned and adapted by studying Kaggle Kernels, exploring novel techniques and approaches

Data-Driven Research Publications

- 11 first-author journal articles with +300 citations in quantitative data analysis