Mihwa Han

mihwa-han.github.io github.com/mihwa-han linkedin.com/in/mihwa-han

Technical Skills

Languages: Python, R, SQL, Jupyter Notebooks, IPython, scikit-learn, Numpy, Tensorflow, Keras, Bash

Shell Script, IDL, Matlab, Fortran, Spark

Other: Git/GitHub, Unix scripting

Project Experience

Dog Breed Classification - mihwa-han.github.io/project1

December 2017

- Developed a Convolutional Neural Network (CNN) using Python/Keras to classify breeds of dog from an input image.
- Achieved ~85% accuracy in dog breed classification.

Analyzing bias in movie ratings - mihwa-han.qithub.io/Movielens project2

December 2017

- Used the MovieLens Data Sets to analyze ratings bias depending on personal genre preference.
- Applied Principal Component Analysis (PCA) and K-means clustering to categorize users with different genre preferences.
- Found clear evidence of bias and systematic differences through clustering, in ratings for movies driven by individual genre preference.

Work Experience

University Of Massachusetts – *Graduate Researcher*

Amherst, MA | September 2013-July 2016

- **Project Leader:** Led a successful project to obtain millimeter imaging with the Large Millimeter Telescope (LMT) in Mexico for distant galaxies.
- Data Cleaning: Clarified and calibrated observational raw data using statistical techniques, including PCA, jackknifing, and Gaussian fitting.
- Data Visualization: Analyzed the data with various models, such as Linear Regression and Monte Carlo simulations, for the underlying gas and dust masses of the galaxies.

Yonsei University – *Graduate Researcher/National* Science Research Institute Researcher

Seoul, Korea | March 2008-August 2013

- Data Preprocessing: Preprocessed imaging data, amounting to ~300GB of data for about two million stars and successfully combined many individual images, thereby reducing the data volume while increasing the signal-to-noise for the final images.
- Statistical Morphological Spatial Analysis: Found best-fitting Point Spread Function models and improved the results of stars' fluxes in astronomical spatial imaging data.

Education

Udacity – *Machine Learning Nanodegree* University of Massachusetts, Amherst, MA - Astrophysics, M.S. Yonsei University, Seoul, Korea- Astrophysics, M.S. Yonsei University, Seoul, Korea- Astrophysics, B.S. Hanyang University, Seoul, Korea- Major in Math

July 2017 - Current Feb 2017 Feb 2010

Feb 2008

2002 - 2006