JENNIFER KADOWAKI

📱 (714) 726-0579

🌐 jkadowaki.github.io

✉ jkadowaki@email.arizona.edu

in /in/jennifer-kadowaki

○ jkadowaki

Skills

Operating Systems
- Linux, Mac OS X, Windows

Programming
- (*Expert*): Python, LaTeX, MATLAB, SQL
- (*Familiar*): git, HTML, R

Software
- Mathematica

Technical Knowledge
- Bayesian Statistics
- Computer Vision
- Data Mining
- Data Visualization
- Image Processing & Analysis
- Machine Learning
- Natural Language Processing
- Neural Networks
- Spectral Processing & Analysis
- Statistical Analysis

Projects

Statistical Methods
- Reproduced the 2011 Physics Nobel Prize results of the accelerating expansion of the universe using Bayesian analysis. Tested results for bias due to host galaxy masses.

Big Data & Machine Learning
- Detected dwarf galaxies using kernel density estimation on large imaging surveys. Evaluated the completeness and false detection rates for different kernels.

Neural Networks
- Built an ensemble of bidirectional GRUs for sentiment analysis of tweets.

Education

2015 - 2021	**PhD Major, Astronomy & Astrophysics**	University of Arizona
	PhD Minor, Information Sciences	
2015 - 2018	**MS, Astronomy & Astrophysics**	University of Arizona
2010 - 2014	**BS, Physics**	UCLA

Astronomy Research

Graduate Research Assistant　　　　　　　　　　University of Arizona
The Formation of Massive Ultra-diffuse Galaxies　　　Aug 2015 - present

- Conducting exploratory analysis and predictive modeling to discover new ultra-diffuse galaxies in imaging and catalog data in TB-sized, deep-imaging surveys
- Developing a distance-predicting algorithm as an inexpensively alternative to obtaining spectroscopic redshifts for UDGs.
- Conducted the largest spectroscopic survey of UDGs to date.
- Used wavelet decomposition to extract UDGs in deep-imaging surveys.
- **Tools**: Python (keras, scikit-learn, pandas, bokeh, matplotlib), Machine Learning (neural networks, random forest, nearest neighbor, kernel density estimation, regression), SQL, IRAF
- **Award**: Honorable Mention, NSF Graduate Research Fellowship (2017)

Machine Learning Research

Graduate Research Assistant　　　　　　　　　　University of Arizona
Automated Model Assembly from Text, Equations, and Software　　Jan 2019 - present

- Developing state-of-the-art, deep learning model for equation reading and extraction for research papers on ArXiV.
- Performing training & inference on an high performance computing cluster.
- **Tools**: High Performance Computing, PyTorch, Python (NumPy, matplotlib),

Temporal Ensembles of Fined-Tuned BERT Models for Offensive Language Identification

- Fine-tuned Bidirectional Encoder Representations from Transformers (BERT) models for offensive language identification.
- Tested various metrics to select optimal epochs for temporal ensembling.
- **Tools**: BERT, High Performance Computing, Python

Employment

Data Science Ambassador　　　　　　　　　　　University of Arizona
Data Science Institute　　　　　　　　　　　　　　Aug 2019 - May 2020

- Designing and administering short courses in the College of Science to increase data science literacy by applying machine learning & data science to research.

NOAO Specialist　　　　　　National Optical Astronomy Observatory
The NOAO Data Lab Team　　　　　　　　　　　　May 2018 - Aug 2018

- Developed ML-based science cases on open source data to showcase Data Lab products to users.
- **Tools**: Python (scikit-learn, pandas, bokeh, seaborn), Machine Learning (random forest, nearest neighbor), JupyterLab, SQL

Graduate Teaching Assistant　　　　　　　　　　University of Arizona
The Physical Universe (ASTR 170B), Cosmology (ASTR 201)　　Jan 2017 - May 2018

1st Author Publications

- *On the Properties of Ultra-diffuse Galaxies Across Environment*
  Kadowaki, Zaritsky, & Donnerstein. *submitted*.
- *Spectroscopy of Ultra-diffuse Galaxies in the Coma Cluster*
  Kadowaki, Zaritsky, & Donnerstein. 2017, ApJL, 838, L21.