Seyed **Kaveh Vasei** Zadeh Kashani,
svase001@ucr.edu | 9518239742 | https://www.linkedin.com/in/kaveh-vasei/ | https://github.com/KavehVasei

Data Scientist | Astrophysics, PhD. | Permanent US Citizen

Data Scientist with extensive experience a strong background in computational modeling, image processing, and statistical analysis. Exemplary academic qualifications include a Ph.D. in Physics, from the University of California Riverside (2018) as well as M.Sc. degrees in Observational Astrophysics. Advanced abilities in data analysis, utilizing statistical software, and programming languages such as Python, SQL, and FORTRAN. Able to effectively communicate complex concepts, both verbally and in writing for both technical and nontechnical audiences. With 300+ citations.

EXPERIENCE

2022-Present

Data Science Career Track - Fellow, Springboard

- 500+ hours of hands-on course material, with 1:1 industry expert mentor oversight, and completion of 4 in-depth portfolio projects. Mastered skills in Python, SQL, data wrangling, data visualization, hypothesis testing, and machine learning.
- Developed machine learning models, including decision trees, random forests, and gradient boosting, to build a predictive model for accident severity classification, aiming to improve accident prevention measures and response strategies.
- Computer vision: Image Classification of Traffic signs, Architect and evaluate a few Baseline models using Convolutional Neural Networks and deep learning on google colab cloud computing GPU, compared the result by using transferred learning on a pre trained CNN Model (ResNet) adding two additional layers to the neural network and tuning the hyper parameters (learning rate, batch size, and optimizer).
- Building a Book Recommendation System based on good reads dataset. As a team project.
- Many more test case studies and guided capstones ranging from Regression, statistical inferences, PCA and TSNE, time series Analysis, Databreak and Pyspark and Sql, Various clustering and classification algorithms, Random Forest and XGboost, Hadoop and pyspark . https://github.com/KavehVasei/Springboard

2020-Present

Independant Private Tutor, Wyzant

- Thousands of hours teaching and independent tutoring with a rating of 5.0/5.0.
- Provide individualized tutoring to students at a variety of skill and grade levels, from High-school to college students. Focusing on Physics, Astronomy, Math, Statistics and programming.

2013-2019

Researcher/Research Assistant, UC Riverside | Riverside, CA

- Developed a pipeline in python to augment the efficiency of the image reduction procedure of Space Hubble Telescope for low signal and low noise UV images, increasing the efficiency and observationally detected the first ionizing galaxy ever.
- Statistical analysis, image reduction and convolution from various filters as well as their spectra, extracting the results to put strong observational upper limits on the amount of ionizing photon emissions of the galaxies at redshift 2-3.

2012-2018

Teaching Assistant and Lab Instructor, UC Riverside | Riverside, CA

- Courses: Earth's climate through time (GEO11), Global climate change and sustainability (GEO04), and Oceanography (GEO09)
- Modeling the semi-direct effects using NCAR CAM driven by observationally constrained aerosol forcing on the Yellowstone supercomputer

Summer 2012 **Visiting Researcher, Institue d'Astrophysics de Paris | Paris, France**

- finalizing my void finding algorithm using classification and friend of friends of local maxima in an optimized distance field grid using KNN, comparing the results of high resolution cosmic simulation with the observed data which lead to my first ISI paper.

2010-2012 **Researcher, Institute for Research in Fundamental Sciences (IPM)| Tehran, Iran**

- Using high performance computing and bash script I improved the efficiency of my void finding algorithm which I had developed for my master thesis.

2008-2012 **Astrophysics Olympiad Instructor, Allameh Tabatabaei & Farzanegan | Tehran, Iran**

- Teaching Astrophysics and cosmology as well as data analysis to prepare and train talented high school-students for the competitive Astronomy Olympiad in Iran. Many of my students achieved national/International medals.

Sep 2009-Dec 2009 **Junior Web Designer, Rahyab System Sazmand | Tehran, Iran**

- Designing web sites, dropdown menus, and MySQL data management, using DHTML, ASP.net, Javascript and MySQL.

EDUCATION

Sep 2012-Sep 2018 **Physics(Astro), Ph.D.:** University of California Riverside

Sep 2004-Sep 2007 **Observational Astrophysics, M.Sc.:** University of Tehran

Sep 2000-Feb 2004 **Physics, B.Sc.:** Amirkabir University of Technology

AWARDS

- Ronald Blanchard Estate Fellowship, 2017
- Dean's Distinguished Fellowship Award, UC Riverside, 2012

SKILLS

- Machine Learning: Experienced in various supervised Machine Learning algorithms such as Linear Regression, Logistic Regression, Support Vector Machine, Naive Bayes, K-nearest Neighbors, Random Forest, and Neural Networks. Familiar with the core concepts of boosting algorithms such as AdaBoost and XGBOOST.
- Data Structure: Python data structures, Pandas data frames, Numpy arrays, and binary and HDF5 hierarchical data structures.
- Python: Fluent Python programmer in different environments including Bash, Jupyter, and Anaconda .
- Numerical Computations: I have extensive experience in developing Python pipelines to solve highly non-linear models (finite-element analysis), e.g. coupled differential equations with Scipy and Numpy.
- SQL: Fluent SQL programmer in different flavors of SQL including postgres and Spark.
- Data Analysis and Visualization: Frequent user of Matplotlib, seaborn, plotly, and other Python visualization packages
- Math & Statistics: Discretized differential equation, multi-variable calculus, linear algebra, bayesian statistics. Error propagation. T-test.
- Other skils: LaTeX, Presentation, High Performance Computing (HPC), Finite Element

About

I am a results-driven Data Scientist with expertise in machine learning, computer vision, and database modeling. Skilled in Python, I extract valuable insights from complex datasets to drive data-informed decision-making. With experience in image recognition, object detection, and natural language processing, I excel at building and fine-tuning neural networks using frameworks like TensorFlow and Keras. Additionally, I possess strong skills in computer vision techniques, including convolutional neural networks and image preprocessing. My database modeling expertise ensures efficient data storage and retrieval for large-scale projects.

Skills and Qualifications:
• Programming: Python (Pandas/NumPy/Matplotlib/Scikit-Learn)
• Machine Learning Models: Regressions , Classifications and Clustering
•TensorFlow, Keras, Convolutional Neural Networks (CNN)
• Tools: Oracle Database, MS access
• Others: Astrophysics/Physics/Scientific Computation