Ali Zafarani, Ph.D.

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Experience

Galvanize Inc. (f.k.a Zipfian Academy), San Francisco, CA   May 2015 – Sep. 2015
Data Science Fellow

- Immersive data science program focused on core concepts of data science including exploratory data analysis, statistical analysis and machine learning algorithms, databases, NLP, recommendation systems and big data.
- ***Case studies on real-world data***: churn prediction, movie recommendation, fraud detection, NLP and cluster analysis (NYT & Wikipedia articles).
- ***Project***: Geo-location estimate of images using visual features and scene recognition. Classification and regression models are trained and tested on over 100k Google street view images from San Francisco. *Repo*: github.com/alizaf/LocateThisView

ARCADIS-U.S., Irvine, CA   Mar. 2014 – Apr. 2015
Quantitative Hydrogeologist/ Data Analyst

- Collected, compiled and analyzed regional hydrologic and climate data (e.g., precipitation, runoff and aquifer parameters). Developed conceptual and numerical models, performed predictive simulations and utilized model results to address environmental risks of construction, mining and remediation activities.
- Explored and implemented statistical significance of 50 and 100 years rainfalls in designing mining sites covering layers.
- Developed and utilized SQL databases. Managed and explored data to discover effective and valuable trends from hydrogeological databases.

University of California, Irvine, CA   Jun. 2009 – Jun. 2014
Research/ Teaching Assistant

- Developed distributed models using Matlab, Python, MPI, Fortran and C++, in order to study flow and transport in fractured rocks via simulating high-resolution stochastic networks of three-dimensional synthetic fractures.
- Applied exploratory data analysis on simulation results from fluid flow and particle-tracking models. Performed Monte Carlo analysis in fracture networks, revealing effects of micro-scale and stochastic properties on large-scale transport. Performed streamline-scale simulations in networks of fractures using Finite Element Analysis (FEA).
- Developed novel stochastic algorithms as an alternate to the direct solution of convective-diffusive PDEs in fracture junctions in order to enhance computational efficiency of the transport models.
- Advanced courses in optimization, hydrologic systems, atmospheric sciences, machine learning and optimization.
- ***Teaching***: Prepared lectures and laboratory experiments in courses of Water Resources Engineering and Groundwater Hydrology. Actively mentored students with course topics, projects, assignments and lab reports.

Temple University, Philadelphia, PA   Sep. 2007 – May 2009
Research Assistant

- Performed hydrologic simulations to delineate the floodplains based on 100 and 500 years storm events. Studied and investigated application of overland surging and hurricane models (Pennypack watershed, PA).
- Conducted on-site sampling of contaminated soil and groundwater after Exxon Valdez oil spill in Prince William Sound, Alaska. Performed field measurements and numerical modeling of tidal fluctuations in seawater-groundwater interactions (Prince William Sound, AK).

Environmental and Water Research Center (EWRC), Tehran   Jan. 2005 – Mar. 2007
GIS data analyst

- Collected remote sensing and GIS data (LANDSAT-TM satellite images). Used ArcGIS and satellite data to compile information and analyze trends of vegetation cover and agricultural water consumption in Sirvan (Diyala) river basin, Iran.

Education

University of California, Irvine, CA (2014)
Ph.D., Civil Engineering/Computational Geoscience minor
Thesis: High-Resolution Analyses of Anomalous Transport in Large-Scale Variable-Aperture Discrete Fracture Networks
Temple University, Philadelphia, PA (2009)
M.Sc., Civil Engineering
Sharif University of Technology, Tehran, Iran (2004)
B.Sc., Structural Engineering

Technical Skills

- ***Programming/ machine learning***: Python (Scikit-Learn, Scipy, NLTK, Scikit-Image, Lasagne), R, Matlab, Bash, GIT, LaTex.
- ***Data Management***: PosgreSQL, MongoDB, Python (Pandas, Numpy, Theano, BeautifulSoup), Spark, Hadoop.