Optimal Sensor Node Placement using LIDAR Data (Python, R, MATLAB Optimal Sensor Node Placement using LIDAR Data (Python, R, MATLAB Berkeley, CA Ready for hire **immediately** in the bay area. I also do contract work remotely, if you'd like or prefer that. Authorized to work in the US for any employer Work Experience Optimal Sensor Node Placement using LIDAR Data (Python, R, MATLAB SNRI Sierra Nevada Research Institute - Berkeley, CA January 2015 to Present Given a LIDAR image, optimal locations for snow depth sensors were determined considering tradeoffs between number of sensor nodes, connectivity within the wireless sensor network, and evenly-sensed domain. - K-folds cross validation was used to determine efficacy of node locations. - Convex optimization in MATLAB (using quadprog) was used to determine sensor node locations that maintain wireless connectivity Python Developer Self-employed, contract work - Berkeley, CA January 2015 to Present Programmed an object-oriented optimization program that optimally assigns requests to the appropriate cloud, and host base on availability, and distance from request. - Instructed undergraduate students, and working professionals, both one-one and in a classroom setting on the following: o Data structures and efficient algorithms (in theory, and Python/C/Matlab implementation) o Preparing for technical interviews in software engineering, and data analysis Statistical Analyst for Geospatial data (R and Python) Geostatistics Estimation and Simulation (R) December 2014 to Present Used R to analyze real-world, sparse environmental data o Used EDA techniques to determine spatial relationships between variables (covariance models, cross-correlation etc.) o Used estimation methods on the residuals (co-kriging, ordinary kriging, IDW) of the models to cross-validate, sometimes using the jackknife or leave-one-out method when there was very sparse data. o Used conditional and unconditional simulations, sometimes involving indicator variables, to evaluate scenarios such as changes in groundwater levels, temperature, and contaminants. Python Data Analysis Developer KA Lite Inc. - Berkeley, CA June 2014 to August 2014 Used pandas and matplotlib to visualize data for instructors using KA Lite - Integrated data visualization with existing django applications - Collaborated remotely with developers around the world using github Research Assistant (Python) Decision Algorithm for Schedule Optimization (Python) - Lewisburg, PA June 2013 to August 2013 Applied OOP simulation to the pumping

schedules of water utility companies, using real-world data -Design Considerations: Algorithmic complexity, computation/accuracy tradeoffs, data visualization. -Input is csv file of projected water demand, output is figures, and optimized schedule. -Evaluating the usefulness of the algorithm using data from York Water Company in Pennsylvania -Pursued this project as an entrepreneurial pursuit, funded by the Reed-Garman Entrepreneurship award (see Education Masters in Systems Engineering University of California - Berkeley - Berkeley, CA B.S. in Environmental Engineering Bucknell University Skills C/C++, Python, R, Matlab, Linux, Machine Learning, Data Analysis, ALL Microsoft Office Software, git Links http://github.com/jormak27 Additional Information TECHNICAL SKILLS -Very skilled: R, MatLab, Python, git (username: jormak27) -Experienced: C/C++, PHP, Bash scripting, Windows, Linux, Socket programming, LabView, PSoC creator - Python Libraries used: pandas, scipy, numpy, matplotlib, django, scikit-learn -Programming concepts: hashmaps, trees, recursion, circular queues, algorithmic complexity, mutex locks, interrupt vectors, unit testing, pointers, -Mathematical concepts: linear algebra, bayesian statistics, spatial statistics, geostatistics, stochastic processes, time series analysis, state estimation, parameter identification, convex optimization, support vector machines,

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