**Matt Sandman**  matt.sandman@outlook.com

**CAREER OBJECTIVEData scientist with 5 years of experience**, passionate about statistical and predictive modeling concepts, machine-learning approaches, classification techniques and in computational biophysics field. Possesses a **PhD in physics** and **Data Science Certificate**, good analytical, interpersonal, organizational and technical Skills.

**TECHNICAL SKILLS**

* **Programming & Statistics:** Python (Numpy, SciPy, Pandas, MatPlotlib, Nltk, Scikit-Learn, Tensor Flow), Linux, HPC, Statistical Modeling, A/B testing
* **Machine Learning Algorithm:** Decision Trees, Naïve Bayes, Linear Regression, Logistic Regression, SVM, Ensemble Methods, Clustering Algorithms, Deep Learning
* **Data Base & System:** Git, AWS, SQL, PySpark
* **Computational biophysics:** DFT method, MD Simulations, Charge Transfer, Free Energy Calculations

**PROFESSIONAL EXPERIENCE**

**Data Scientist** | Galvanize, Inc. | Seattle, WA | Jan 2017- Till Date

* Apply Time Series analysis(ARIMA) to sales prediction.
* Apply deep learning with TensorFlow in Python to image recognition.
* Follow the CRISP-DM process for the data mining project design: Obtain congressional records using web scraping, apply NLP analysis to convert the documents (unstructured data) into TF-IDF vectors.
* Assign proper topics to them with different classification techniques such as Naive Bayes, Logistic Regression and Random Forest using PySpark in AWS platform, and implement search algorithm.
* Apply machine learning algorithm to real-world case studies such as churn prediction studies, fraud detection studies and movie recommendation systems.

**Environment:** AWS(EC2,S3), PySpark, Anaconda, Hadoop, MapReduce, Python 2.7, Jupyter Notebook, MongoDB, Git.

**Data Analyst- Postdoctoral Fellow** | UC Simulation Center | Cincinnati, OH | Jul.2015 – Jan.2017

* Analyze data generated from molecular dynamics simulations, visualize molecular structures, and optimize the binding free energy calculation algorithm, to identify the best candidates that bind to tooth enamel and prevent from staining.
* Develop project proposals, write progress reports, and present results.
* Communicate with experimentalists to receive feedbacks, improve candidate’s selection and provide computational guidance for new experiments.

**Environment:**

Python 2.7, MD softwares, HPC, Tableau.

**Research Assistant- Data Analysis** | University of Cincinnati | Cincinnati, OH |Jan.2013 - Jul.2015

* Build molecular structures, run MD simulations, perform free energy and quantum chemical calculations, apply numerical analysis to the distributions of the interaction energies, to infer the path of transporting in the chloride ion transporter.
* Developed Local Molecular Field Theory and the first one to apply it to predict the transport mechanisms in the chloride ion transporter, which saves computational time and enhances sampling.
* Taught physics lab and problem-solving skills.
* Work in a team environment with other members in the group on a number of research projects.

**Environment:**

Python 2.7, MD softwares, HPC.

**PUBLICATIONS:**

Zhihong Chen, and Thomas L. Beck, “Free Energies of Ion Binding in the Bacterial CLC-Ec1 Chloride Transporter with Implications for the Transport Mechanism and Selectivity”, Journal of Physical Chemistry B. 2016 120(12), pp 3129-3139.

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