WES BARNETT, PHD

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EXPERIENCE

Senior Machine Learning Engineer – *American Express, New York, NY*   **Apr 2019 – present**

- Developed and trained LSTM-based neural networks for predicting a user's next page and journey on Manage Your Card Account, using Tensorflow/Keras.
- Productionize models into API's using Flask, Starlette, and Docker, and deployed models to Openshift.
- Researched reinforcement learning algorithms and implemented them into proof-of-concept API's for web content optimization.
- Educated engineers, product owners, and leadership on machine learning.

Data Science Fellow – *Insight Data Science, New York, NY*   **Sep 2018 – Mar 2019**

- Created a Chrome extension to help Reddit users find communities based on content they submit and view by utilizing supervised learning models.
- Trained and validated Support Vector Machines with Stochastic Gradient Descent using Python and SQL, utilizing natural language processing for feature engineering.
- Deployed models to AWS with Docker, Apache, and Flask.

Postdoctoral Research Scientist – *Columbia University, New York, NY*   **Jun 2017 – Sep 2018**

- Identified potential high-performance polymer materials, selecting top candidate materials out of 10,000+, by training and using Gaussian Process Regression models.
- Scraped thousands of records from polymer website for model predictions using Selenium.
- Initiated and led weekly meeting where team of postdocs and graduate students rotated in teaching simulation and machine learning topics.

Research Assistant – *Tulane University, New Orleans, LA*   **Aug 2012 – May 2017**

- Designed and set up molecular simulations, analyzing over 10 TB of resulting data, including statistical and unsupervised learning methods.
- Wrote requests for and received 1.1 million CPU-hours on government super computer in order to run project simulations.
- Mentored undergraduate students on their research projects.

EDUCATION

Ph.D., Chemical and Biomolecular Engineering – *Tulane University, New Orleans, LA*   **2017**

B.S., Mechanical Engineering – *Mississippi State University, Starkville, MS*   **2007**

SKILLS

Programming: Python, SQL, C++, Fortran

Programs/tools: scikit-learn, Tensorflow/Keras, pandas, Hive, Linux, git, Docker, numpy, matplotlib, Jupyter, Flask, Starlette

Data science: machine learning, deep learning, natural language processing, data visualization