## Godfred Somua – Gyimah, PhD

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**Legal Status: US Permanent Resident**

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### **Work Experience**

#### **MONSANTO COMPANY (acquired by BAYER AG)** Saint Louis, MO

***Senior Data Scientist (Monsanto Emerging Leaders in Science Program),*** *January 2018 to present (1 year)*

* Translating business problems into research questions for exploratory, descriptive, predictive and prescriptive analytics.
* Combining UAV field imagery with environmental data to build plot-level yield prediction models for cotton, corn and soybean.
* Developed deep learning models for seed vigor prediction with ~99.6% sensitivity and ~90.1% specificity using Python, Keras and CNN. Developed seed clustering insights using K-Means and Jupyter Notebook.
* Developed a dryer recommender model for optimizing seed quality using DataRobot, R and the Random Forest algorithm.
* Provided technical support for pilot phase model deployments. Collaborated with business leaders constantly to update / agree on project goals and expectations. Created visualizations to communicate model results to both technical and non-technical audiences. Documented projects on Github and prepared technical reports.
* As an ELS scholar, my major leadership task for 2018/19 is to co-ordinate integration efforts within Data Science to promote cross-team collaboration and similar common best practices across all Data Science teams in the R&D organization.

#### **INSIGHT DATA SCIENCE** Manhattan, NY

***Artificial Intelligence Fellow,*** *July 2017 – October 2017* *(4 months)*

* Performed topic modeling and sentiment analyses on the 2016 POTUS election-related tweets using the Twitter Streaming API, NLTK and SAS E-Miner.
* Implemented the 3D CNN action recognition model by [Schindler et al. (2008)](https://www.vision.ee.ethz.ch/publications/papers/proceedings/eth_biwi_00532.pdf) using Python, Keras and the KTH video dataset

**MISSOURI UNIVERSITY OF SCIENCE & TECHNOLOGY**  Rolla, MO

***Doctoral Researcher (Geomechanics, Numerical Modeling & Machine Learning)****, August 2014 – June 2018* *(4.5 years)*

* Developed and validated a novel method for calibrating the geomechanical parameters of DEM using XGBoost and RStudio. The method combines simulation of tri-axial rock testing with XGBoost to achieve prediction accuracies of up to 95.54%. Developed and validated a 3D numerical model for studying the failure patterns of geomaterials during rock excavations.

#### **HUAWEI TECHNOLOGIES** Accra, Ghana

***Costumer Analytics Manager,***  *October 2011 – September 2013 (2 years)*

* Provided formal mentoring and leadership to a team of 5 analysts. Led exploratory, descriptive and predictive costumer analytics studies to discover insights and opportunities. Led end-to-end analytic projects for revenue forecasting, customer segmentation, customer churn and sentiment analyses. Made presentations to technical and non-technical audiences.

***Engineering Data Analyst,*** *January 2010 – November 2011 (2 years)*

* Produced exploratory, descriptive and predictive analyses for material usage patterns, geotechnical investigations and construction project cost forecasting. Interfaced with clients and created visualizations to communicate analyses / recommendations. Presented and explained technical recommendations to multi-disciplinary audiences.

### **Education**

#### **MISSOURI UNIVERSITY OF SCIENCE & TECHNOLOGY** Rolla, MO

#### . ***PhD Mining Engineering*** *(GPA: 4.0 / 4.0)* Aug. 2014 – Dec. 2018

#### ***Graduate Certificate, Business Analytics & Data Science*** *(GPA: 4.0 / 4.0)* Aug. 2016 - May 2017

#### *(Courses: Data Mining & Machine Learning, Data Visualization, Text Mining, Business Analytics & Data Science)*

#### ***MS Mining Engineering*** *(GPA: 4.0 / 4.0)* Aug. 2014 - July 2016

#### **UNIVERSITY OF LEEDS** Leeds, England

#### ***MS Engineering Geology*** Sep. 2013 – Aug. 2014

#### **KWAME NKRUMAH UNIVERSITY OF SCIENCE & TECHNOLOGY** Kumasi, Ghana

#### ***BS Civil Engineering*** Aug. 2006 - June 2010

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### **Technical Skills**

* ***Languages*​:** Python, R, SQL, NoSQL, Matlab
* ***Statistics, Machine Learning & Deep Learning*:** Tensorflow, Keras, Scikit-Learn, Caret, Weka, Azure ML, Amazon ML, DataRobot, NLTK, NumPy, SciPy, SAS Text Miner, RStudio, H2O
* ***Data Wrangling & Storage*:** MySQL, Apache Hive, Pandas, R Dataframe, Trifacta, MongoDB, Cassandra, HDFS
* ***Data Visualization*:** Tableau, Power BI, ggplot2, matplotlib
* ***Cloud Computing:*** AWS, GCP, MS Azure, Domino, Paperspace
* ***Other skills:*** Jupyter, Git (github, bitbucket), Flask, Docker, Kubernetes, Apache Hadoop, Apache Spark, JIRA, Trello

### **Profile Summary** (based on advertised role requirements: Developer / Tech Lead – Data Science)

* 9+ years combined experience in analytics research and industry applications.
* 5+ years industry experience in identifying, designing, developing, integrating, deploying and/or running business, big data and/or data science applications. Background in Big Data, Distributed Computing and Analytics.
* Prior experience leading end-to-end data science project implementation and managing an analytics team.
* Experience developing, testing and deploying APIs. Understanding of large scale data processing platforms.
* Knowledge of AI/ML platforms, technologies and experience using Agile methodologies.
* Prior experience building, deploying and scaling applications in cloud platform (AWS)
* Demonstrated experience solving problems using data mining and machine learning techniques.
* Strong ability to communicate effectively highly complex and technical ideas to a diverse audience. Detail-oriented with an expert ability to break down and clearly define problems.
* Strong teamwork and problem solving skills with a focus on business outcomes.