Josh Galloway

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Summary

Engineering Professional focused on Data Science with an MS in Applied Mathematics and success implementing powerful solutions by designing, testing, and leading the implementation of new innovative processes. Strengths include troubleshooting products and optimizing processes, quantitative analysis, modeling, and leveraging the power of technology to solve challenging problems. A reputation for improving advanced process control engineering results, leading project management efforts, utilizing a consultative mindset, and performing analysis from large and raw time series datasets.

Professional Experience

Capstone Technology, Somerville, MA   April 2019-Present
Senior Advanced Process Control Engineer
Contribute to control strategy development & implementation, process testing, experimental design, opportunity analysis using application of first-principles, regression, and time-series modeling. Machine Learning and Data Science champion for this Advanced Process Control and Process Data Analytics company owned by Voith.

- Provide subject matter expertise, product development and sales support for MACSBoiler and MACSHeader model-predictive control solutions with LP and QP optimization. Typical solutions save approximately $1 Million annually in energy costs.
- Implement control strategy development, process testing, experimental design and opportunity analysis applying first-principles, regression, and time-series modeling.
- Perform R&D, Support Vector Machine Learning and Rolling Regression soft-sensor development for paper strength metrics in the U.K. and Vietnam.
- Deliver descriptive statistics and process performance data analysis, develop and deploy custom optimization and process control software in multiple coding platforms.

New England Controls, Mansfield, MA   July 2018-January 2019
Principle Systems Engineer

Led technical engineering projects and analyzed all systems for this systems integrator servicing the life science industry.

- Performed Dynamic Modeling and Simulation of Chemical Reactors supporting sales presentations.
- Developed and deployed custom optimization and process control software in multiple coding platforms.
- Delivered client and internal company presentations to operations and C-level decision-makers.

DES Global LLC, Boston, MA   January 2017-June 2018
Senior Advanced Process Control Engineer

Developed a Combination Boiler Combustion and Cogeneration Facility optimization scheme utilizing fuzzy logic and Fuzzy Neural Net for this operations consulting, and advanced process control company.

- Delivered dynamic modeling and simulation of Cogeneration facilities, developed custom parameterized and first-principles models from historical times-series data for real-time simulation and optimization in python and application of DES's proprietary control algorithms.
- Developed and deployed custom optimization and process control software in multiple coding platforms.

Koch Fertilizer Operations Excellence Group, Wichita, KS   September 2014-January 2017
Senior Advanced Process Control Engineer   October 2016-January 2017
Process Control Engineer   September 2014-October 2016

Performed experimental design, regression, and parameterized transfer functions for one of the world's largest producers and marketers of fertilizers, part of Koch Industries, Inc. in the corporate OpEx group.

- Delivered modeling applications for direct process controls for five ammonia plants.
- Steam reformer outlet temperature modeling and controls. Results produced $250M plant energy savings and increased annual production.
- Process steam system stabilization efforts delivered an 80% reduction in header variability.
- Saved ~$1 Million per code execution by developing and implementing steam reformer abnormal event detection and shutdown prevention logic.

RockTenn Tacoma Mill, Optimization Group, Tacoma, WA   December 2013-September 2014
Senior Process Control Engineer

Implemented a modeling and simulation of a hog boiler fuel system for this paper and packaging company that was Simpson Tacoma Kraft upon my joining, purchased by RockTenn then merged with MeadWestvaco to form the WestRock company with annual net sales of ~ $10 Billion.

- Developed and deployed a control scheme hog fuel delivery solution.

AkzoNobel, Houston, TX   May 2012-November 2013
Control Systems Engineer III

Performed a reactant addition online optimization through adaptive real-time modeling of a chemical reactor which reduced ~30% in reactant addition time for this multinational company in 80+ countries, with more than 32,000 employees.

- Managed cross-functional teams to complete capital projects using waterfall methodologies and functioned as technical lead for dozens of projects including computer control systems, software upgrades, and commissioning of new equipment among other initiatives.
- Applied adaptive real-time modeling of a chemical reactor, reactant addition online optimization which saved up to 30% in reactant addition time.
- Managed cross-functional teams to complete capital projects using waterfall methodologies.

Georgia Pacific Cedar Springs Operations, Cedar Springs, GA   January 2009-April 2012
Process Control Engineer

Managed cross-functional teams and completed capital projects while supporting operations throughout this fully integrated pulp and papermill owned by GP, a subsidiary of Koch Industries, Inc.

- Functioned as technical lead for dozens of projects including computer control systems upgrades, software upgrades, commissioning of new equipment and other initiatives.
- Delivered $1.5 Million in energy savings using Model-predictive supervisory controls LP, QP optimization for a rotary lime kiln.
- Produced savings of $300M for chemical usage, asset availability, emissions control equipment, pH control system modeling and redesign efforts.

Education

Northeastern University, Boston, MA   2021
MS, Applied Mathematics, 4.0 GPA

Southern Polytechnic State University, Marietta, GA   2008
BS, Electrical Engineering Technology, 4.0 GPA

Certifications

Scrum Alliance	*Certified Scrum Master*	2019
Udemy	*R Programming for Data Science*	2020
Coursera	*IBM: Databases and SQL for Data Science*	2020
	Agile with Atlassian Jira	2019
	University of Michigan Intro to Data Science in Python	2017
ISA	*Certified Automation Professional*	2016

Core Competencies

Data Science, Modeling, Data Analysis, Strategic Leadership for Development, Validation & Delivery of Algorithms, Time Series Modeling, First Principles Modeling, Parameterized & Transfer of Function Models, Experiment Design, Regression, Classification, Data Mining, Statistical Testing, Machine Learning, Deep Learning, Natural Language Processing, NLP, Feature Engineering, Statistical Models & Reporting Tools, Predictive Modeling Techniques, Performance Evaluation, Systems Engineering, Organizational Management & Leadership, Mathematical Analysis, Statistical Analysis, Visualization, Python, Scikit-learn, Keras, TensorFlow, NLTK, Pandas, NumPy, SciPy, R, MATLAB, Advanced Process Controls