

Quant with Extensive Problem Solving and R&D Background

Researcher ♦ DevOps ♦ Full-Stack ♦ Optimization ♦ Machine Learning

- **Accomplished technical and application expert** – driven to utilize my engineering skill set to identify and optimize application specific opportunities that range from building out entire data analytics platforms to handling machine learning algorithms and DevOps infrastructure.
- **Proven team leader** – focused on bringing interdisciplinary teams together to achieve highly complex goals within short timeframes. Agile project management.
- **Excellent communicator** – leverage technical education and acquired business acumen to communicate effectively with executive level clients and their respective teams.

Achievement Highlights

- Helped GE Power **save \$600k/year** by reducing number of expensive black-box simulations by 90% leveraging neural network feasibility classifier with efficient global optimization. Summarized in [Book chapter](#).
 - Increased **reliability** of OncoAnalytics product by **70%**. Revamped, improved, and **automated** the deployment process and cloud platform. **Winner** of Flatiron Health’s 22nd Hackathon in the “cutting edge” category for work on POC’ing Kafka.
 - Named inventor on 2 **patent** applications, **275 scientific citations**, author of 2nd most downloaded book chapter in “Recent Progress [...] in [...] Computational Science”, GE Research’s **talent development workshop** in 2018, two **impact** awards, three **above and beyond** awards, one **teaching** award.
-

Skills Summary

SWE, SRE, DevOps	Optimization	Data Analytics
Linux, Jira, Confluence, Splunk	Bayesian Global Optimization	Machine Learning
AWS, EC2, S3, Dynamo DB	Genetic Algorithms	(Un-)Supervised Learning
Docker, Kafka, Ansible, Chef	Stochastic Gradient Descent	Regression, Classification
CI/CD: Jenkins, Circle CI	Robust Optimization	High-performance Computing
Git, GitLab, Arcanist, Phabricator		

Professional Experience

Balyasny Asset Management (Manhattan, NY)

Quantitative Developer, 2021 to Present

I work on the core platforms used by the risk quant and machine learning teams. This encompasses running simulations, backtesting, and reporting results. Responsible for the ownership of the platforms, building them out with new data sources, adding new features, and defining from scratch rigorous DevOps practices. Part of hiring committee for new talent.

Flatiron Health (Manhattan, NY)

Senior Software Engineer, 2019 to 2020

Learned critical tools and practices in DevOps, SRE, and Full Stack engineering. Managed and improved AWS infrastructure including Ansible and Terraform IaC. Managed and advanced docker-based code. Ownership of customer facing OncoAnalytics product and redesign DevOps structure around it; Linux and Python focused. Led the campaign to improve stability and reliability of the platform.

GE Research (Niskayuna, NY)

Lead Research Engineer, 2018-2019

Responsible for strong technical team of 8 engineering PhDs developing next-generation probabilistic methods for company-wide global distribution and implementation, solve challenging GE business unit applications, and provide training for GE’s engineers. Responsible for budgets up to \$1MM. Selected for external project application development such as training the US Air Force on data analytics. Part of hiring committee for new talent.

Research Engineer, 2015-2018

Unique opportunity to implement state-of-the-art optimization and meta-modeling techniques developed during prior PhD thesis research. Led advancement of Digital Twin-based GE crown jewels technologies (key and highly confidential intellectual property). Reduced cost of experiments and expensive computer simulations by 30-90%.

Project Highlights

- **DevOps & SRE:** Led reliability transformation of OncoAnalytics (OA) product: Increased reliability by **70%**. Automated the **CI/CD** deployment infrastructure around OA with Jenkins and OA. Scrum, Agile, Jira, Splunk, postmortems workflow. Familiar and comfortable with **Docker** also in context of Jenkins. Wrote extensive documentation of the system infrastructure in Confluence for the new team (50+ pages). **24/7 on-call** rotations. Worked with **Jenkins 2** and declarative pipelines. Familiar with Circle CI as well; used in personal projects.
- **Python & Bash:** Led the **Python 2 to 3** transition of backend & frontend. Expert on pyenv, pipenv, and pip. Comfortable with scripting and full-scale applications. Led project management transitioning data pipelines from Python 2 to Python 3. Daily work in Python. 7+ years of experience. **Scripting** in shell (bash, zsh); typically for environment setup. Familiar with wheel building and deployment with pip.
- **AWS:** Manage clusters of servers (data and web); **customer** facing products. Monitor performance; **sysadmin** work, responsible for reliability and up-time. Led the Chef secrets migration to S3 and eventually to Vault. Created a “Data Store” combining S3 and Dynamo DB for meta-data storage. Created IAM roles & security groups. Familiar with both cli and console use.
- **Ansible & Terraform:** Created and maintained Ansible **playbooks** and roles for the team. Led transition to pyenv in Ansible and upgrade playbooks to Python 3. Implemented automated install of python wheels from internal Artifactory. Migrating to Terraform for resource creation; combined with Ansible for configuration.
- **Optimizing black-box functions:** Applied Efficient Global Optimization method called IDACE (I brought this to GE from my PhD work) on multiple applications involving air-foil design optimization gaining 0.5%-point efficiency (high impact outcome). Introduced new way to optimize wind turbine blade design from GE’s LM wind acquisition. Methods shown to cut design time in half and deployed on “Digital Thread for Design” – **featured in Forbes**.
Results: Automatic air-foil design approach, exceeded human expert optimization results demonstrating the ability of these designs for wide scale improvements.
- **Trading Platform:** External personal project developing and designing Python and AWS based trading platform which acquires data, constructs strategies, and trades equities. Uses state-of-the-art engineering methods for meta-modeling and optimization such as genetic algorithms, EGO, GPs, NNs, robust optimization, etc. Full statistical testing of strategies for robustness and accuracy.
Results: 2 years of development and +10,000 lines of code. LLC and products formed.

Education

Cornell University (Ithaca, NY)

PhD in Applied & Engineering Physics

GPA: 3.98/4.00 – emphasis on optimization and meta-modeling. Minor: Computer Science.

MS in Applied & Engineering Physics

GPA: 3.98/4.00

MEng in Engineering Physics

GPA: 4.0/4.0

Distinctions

Henri S. Sack Memorial Award for Top Academic Performance.

MEC Fellow.

Manhattan, New York ♦ +1 (607) 280-3817 ♦ jesperoftkristensen@gmail.com ♦ [LinkedIn](#)