

## SUMMARY

- Data scientist with a 6 Sigma Black Belt certification and 10 years of work experience in the automotive industry.
- Lead cross functional teams to solve business problems using analytics in various functional areas such as Engineering, Quality, Supply Chain & Product Line Management.
- Champion organizational changes and functional excellence.

## TECHNICAL SKILLSETS

Data Science: R, RStudio, Python, Anaconda, Minitab, SAS JMP Pro, Git, Github, SQL

Engineering: ANSYS, FeSafe, Creo, MATLAB, NI Diadem, LabVIEW, C, JAVA

## PROFESSIONAL EXPERIENCE

**Data Science Manager, Machine Data Analytics, Cummins**

*Apr '17 - Present*

- Led a team of data scientists and subject matter experts to deliver a package of anomaly detection algorithms.
- Developed diagnostic and prognostic algorithms using hypotheses tests, robust regression, multivariate control theory, cusum control charts, resulting in reduction in unscheduled downtime for mining customers.
- Visualized clusters and patterns in high dimensional datasets using methods like k-Means and t-SNE, which gave subject matter experts new knowledge on end customer engine usage and duty cycles.
- Implemented a research paper on Ranked Permutation Transformation (RPT) on engine sensor data, which gives 'online real-time' anomaly detection alerts.
- Developed R packages for RPT and logging, including help documents, unit tests with `testthat`, and vignettes.
- Established processes like CRISP-DM, project chartering, R code development and version control practices using git, and documentation using R markdown within the analytics team.
- Facilitated monthly technical sessions. Conducted trainings on git, dplyr, `ggplot2`, `ProjectTemplate` etc.

**Data Scientist, Machine Data Analytics, Cummins**

*Aug '16 – Mar '17*

- Developed prognostic algorithms in R to detect long term movements in multivariate engine sensor data using robust time series filters in the `robfilter` package with subsequent `cusum` control charts.
- Wrote production ready R code (code refactoring, unit testing, try-catch robustness, logging and documentation) deployed on an IBM environment.

**Six Sigma Black Belt, Quality, Telematics & Analytics, Cummins**

*Nov '14 – Aug '16*

- Led high complexity and high business impact projects using 6 sigma for product quality, product management, supply chain and engineering with financial impact from \$150,000 to \$10 million. Received numerous awards.
- Solved business problems using inferential statistics, null-hypotheses testing, multilinear regression, ANOVA, DOE, sample size estimation, measurement systems analysis, control charts, among other 6 sigma tools.
- Increased quality of 6 sigma projects by implementing a mentoring process consisting of support sessions, survey driven training events and dashboards to monitor performance.
- Partnered with business leaders to translate process improvement opportunities into actionable charters.

**Senior Structural Analyst, Applied Mechanics, Cummins**

*Mar '10 – Nov '14*

- Drove \$2 million cost reduction via improved engine component designs on numerous new product launches.
- Developed calibrated finite element analyses (2-10% error) to predict on-engine failures.
- Developed & executed experimental tests to validate blocks and lube & cooling components in rigs, test cells.
- Wrote technical reports, wikis and user guides to guide new and experienced technical employees.

**Product Validation Engineer, Current Product Engineering, Cummins**

Jan '08 – Mar '10

- 7-step problem solving leader. Led engineers, data analysts, suppliers & customers to address high warranty cost and customer impact issues delivering an annual warranty savings cumulative of \$250,000.
- Developed algorithms that analyzed failure data and created reports using MS BOXI, Excel, VB and MATLAB increased team's effectiveness – reduced time to delivery and increased right-first-time analyses.

**University of Michigan Recruiting Team, Cummins**

'09 – Present

- Lead intern recruitment and on-boarding. Conduct career fairs, information sessions, interviews.

**Board Member, Society of Automotive Engineers Indiana Chapter**

'11 – '16

- Secretary
- Communication Manager

**ACHIEVEMENTS**

- 2015 Chairman's Quality Award, Cummins Inc
- 2014 Chairman's Quality Award nomination, Cummins Inc
- Four 6 Sigma Best Practice Awards, Cummins Inc
- 2009 Most Valuable Player, Engine Business, Cummins Inc
- KVPY Scholar, Aerospace Department, Indian Institute of Technology, Bombay ('03 - '06)

**EDUCATION**

- Master of Science in Predictive Analytics, Northwestern University, (GPA: 4.0) Dec '18
- Master of Science in Mechanical Engineering, University of Michigan – Ann Arbor, (GPA: 6.1) '07
- Bachelor of Engineering in Mechanical Engineering, University of Pune, (First Class with Distinction) '06

**Relevant Coursework** Regression & Multivariate Analyses, Generalized Linear Models, Machine Learning, Deep Learning, Experimental Design & Process Control, Text Analytics, DB Systems & Data Prep, Business Leadership

**ACADEMIC EXPERIENCE**

**Research Assistant, Eng. Research Center U of M, National Institute of Science & Technology**

'07

- Developed a semiconductor factory network simulator to investigate IEEE-1588 time-sync in distributed systems.
- Implemented modules handling data requests & reports in XML, JAXB complying with SEMI standards.

**Research Assistant, Compliant Systems Design Lab, University of Michigan**

'06

- Delivered analytical models of the non-linear, bi-stable torsional springs.
- Developed optimization algorithms using MATLAB & ANSYS to design to a desired force-deflection behavior.

**PAPERS**

- Precise Time Synchronization in Semiconductor Manufacturing, Proceedings of IEEE 1588 Conference, Oct '07
- Time synchronization for diagnostics and control in Ethernet-based applications, Proceedings of the American Controls Conference, Jun '08

**COMMUNITY INVOLVEMENT**

- Columbus Bike Co-op Mechanic, '15 – '17
- iGrad Columbus Mentor, '14 – '15
- Cummins Earth Day Booth, '13
- Mill Race Park Cleanup, Columbus City, '12
- Arc Center for Excellence, '10
- Book Buddies Mentor, '09