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| [rsangole@u.northwestern.edu](mailto:rsangole@u.northwestern.edu) (812) 390 5166 | | RAHUL SANGOLE | | | [linkedin.com/in/rahulsangole](https://www.linkedin.com/in/rahulsangole) [rsangole.netlify.com](http://rsangole.netlify.com/) | | | |
| **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, * Master of Science in Mechanical Engineering, * Bachelor of Engineering in Mechanical Engineering, | | | | Northwestern University, *(GPA: 4.0)*  University of Michigan – Ann Arbor, *(GPA: 6.1)*  University of Pune, *(First Class with Distinction)* | | | | *Dec ’18*  *’07*  *’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 | | | | | |