Nikhil Vidhani

Lead Data Scientist, Target Corporation

Executive Summary

- Architected end-to-end simulation capabilities for order allocation and available-to-promise systems impacting 3% of all digital sales ($600+Mn).
- Independently designed and implemented a new consolidation algorithm projected to save $20Mn+ in shipping costs and drive $300Mn+ in incremental sales.
- Proven record of transforming complex business challenges into scalable algorithms and simulation platforms that have delivered measurable impact across Target's last-mile and digital fulfillment network — improving speed, accuracy, and cost efficiency enterprise-wide.
- Deep technical expertise in Python, PySpark, R, and SQL, with extensive experience in algorithm design, machine learning, software engineering, and data pipeline development.
- Strong cross-functional leadership, influencing engineering, product, and business stakeholders, and mentoring a high-performing team of data scientists while driving an experimentation culture.
- Formerly led a data science team at WNS, delivering advanced ML solutions for finance and auditing, driving multimillion-dollar operational savings.
- Ph.D. in Finance (IIM Bangalore) and Master's in Engineering (IISc Bangalore), with research presented at top international conferences.

Industry and Research Experience

Nov 2022 – Present — **Lead Data Scientist**, *Target Corporation, Bangalore*, Team Size: 6.

- Building end-to-end simulations for last mile operations including order allocation, available-to-promise, and big-data pipelines.
- Conceived and developed new algorithms, including a cost-integrated promise speed generation framework projected to save $20Mn+ in ship costs and drive $300Mn+ in new sales.
- Leading product enhancements, releases, fixes, and code reviews across multiple simulation tools with 100+ internal users.
- Driving engineering implementation of next-gen promise logic, conducting extensive knowledge transfers, and influencing leadership, product, and engineering stakeholders.
- Engaging cross-functional teams in experiment design, deep-dives, and showcasing simulation capabilities in org-wide presentations.
- Leading and mentoring a team of senior and junior data scientists through regular 1:1s, sprint reviews, and design discussions — fostering technical excellence and delivery ownership across simulation and analytics initiatives.

Feb 2022 – Nov 2022 — **Sr. Group Manager (Data Science)**, *WNS Global Services, Bangalore*, Team Size: 7.

- Building F&A analytics/ML apps for payments, collections, reporting, prediction, and auditing functions
- Maintaining code-base (GitHub), APIs, automating deployment
- Mentor junior team members and conduct knowledge-sharing sessions

+91-994-567-3757 • nikhil141088@gmail.com • nikhil-vidhani
nik141088

Jun 2016 – Jan 2022 **Research Scholar**, *Indian Institute of Management, Bangalore*, IC.

- Extensively researched asset pricing anomalies, examined impact of disagreement on trading volume, analyst forecasts, and 10K document characteristics
- Undertook comprehensive data collection, cleaning, modelling, and statistical analysis
- Presented in several conferences. `https://github.com/nik141088/phd-thesis-rmarkdown`

Jun 2018 – Jan 2022 **Primary Instructor**, *Programming and Data Analysis*, Batch Size: 5-40.

- Took multiple short/long courses on R programming, data analysis, and LaTeX
- Instructor Rating: 4.7/5 (`https://github.com/nik141088/applied-R`)

Jul 2012 – May 2016 **Software Engineer**, *Cisco Systems, Bangalore*, IC.

- Design, implement, test, review, and documentation of 4G-LTE and WiFi systems
- High Availability/Redundancy architecture. Network security.

Major Projects

2025 – Present **Consolidation Algorithm Revamp**, *Target*.

- Designed a new algorithm to replace the existing consolidation logic, integrating cost optimization with delivery speed decisions.
- Built and validated the new approach using promise and GOA simulators, demonstrating potential savings of $20Mn+ in shipping costs and $300Mn+ in incremental sales.
- Independently implemented, tested, and simulated the end-to-end impact under stringent latency constraints for a customer-facing module.
- Presented findings to leadership, product, and engineering, influencing adoption and driving the engineering rollout.
- Conducted multiple knowledge-transfer sessions to bridge design understanding between data science and engineering teams.

2023 – Present **Simulations Capability**, *Target*.

- Led a team of 4 to design, implement, and maintain a unified simulation tool now used by 100+ users across planning, digital fulfillment, and operations teams.
- Enabled end-to-end scenario testing by integrating Promise and GOA simulators, supporting joint optimization of delivery speed and shipping cost.
- Transitioned data ingestion from static to Kafka pipelines, ensuring up-to-date, reliable, and self-sustaining input generation.
- Established validation mechanisms and pre-run checks within the UI, reducing user debug and support time by 50%.
- Oversaw three major and eight minor releases in 2025, introducing automated accuracy measurement and reporting frameworks.

2024 – Present **Promise Simulator**, *Target*.

- Developed an Available-to-Promise (ATP) simulator from scratch—covering algorithm design, product discussions, interface design, and deployment automation.
- Validated and improved model accuracy from 50% to 85% through large-scale testing against production data.
- Identified early use cases influencing 3% of all Target digital orders ($600Mn+).
- Actively leveraged by fulfillment optimization, engineering, and supply chain planning teams.

2023 – 2024 **Replay Mode and Logging**, *Target*.

- Engineered a post-mortem analysis tool, employing massive parallelization of sequential tasks (*Replay*), for quick output evaluation
- Implemented granular logging for granular scrutiny of allocation decisions. Used tabular representation for easy consumption of logs
- Improved labor allocation accuracy from 50% to 90% and reduced Air service utilization by 10x

2022 **QA Analytics**, *WNS*.
- Highly configurable workflow tool designed to catch human errors in invoice indexing
- Provides a one-stop solution for outlier and anomalous transaction detection
- Automated bundling with portable-R, necessary packages, and configs for scalable hassle-free deployment
- Single tool deployed across 5 different audit teams within WNS. Caught $5+ Mn worth of scanned invoices with sanity issues.

2022 **Audit Mate**, *Personal*.
- ML solution to classify manual invoice-indexing errors and help controllers predict them right from the comfort of excel
- Built and served using *h2o* framework and deployed as an API service
- Increased audit error incidence from 10% to 95%
- `https://github.com/nik141088/audit-mate`

2022 – Present **Invoice Processing**, *Personal*.
- Deep Learning based tool to compare similar looking invoices
- Multi-tiered comparison based on image embeddings and OCR text embeddings
- Can be used to boost data processor's efficiency and productivity
- `https://github.com/nik141088/invoice-processing`

2020 – 2021 **Factiva Download**, *IIMB*.
- Developed a robust, self-organizing, and highly parallel web-scraping system for Dow Jones Factiva news articles
- Automated network/scraping/parsing failures, de-duplication, and storage management
- Extracted and processed 25+ Mn articles and analyzed sentiment using GPT2/DistilBERT

`https://github.com/nik141088/factiva-download`

Tools and Skills

Advanced **Programming**, *Python, pyspark, hive, R, Shiny, C/C++, Kotlin/Java (basics)*.

Advanced **Machine Learning**, *Regression, Classification, NLP, MLOps (basics), h2o, Deep Learning, Tensorflow, keras*.

Advanced **Design Principles**, *Data Structures, computational/space complexity, vectorization, functional programming, test-driven development, modular development, network security*.

Advanced **Solutioning**, *Problem solving, product development, charting solutions, impact discovery, strategic thinking*.

Advanced **Engineering**, *API, plumber (R), debugging, web-scrapping, Linux, code review, github, git, Databases, AWS, CI/CD*.

Advanced **Visualization and Documentation**, *ggplot, plotly, R Markdown, streamlit, Latex, MS Office*.

Expert **Domain Knowledge**, *Last Mile Operations Research: available to promise and order allocation, Finance, Accounting, Statistics, Regression Analysis*.

Progressive **Leadership/Interpersonal**, *Mentoring, project scoping/planning/managing, stakeholder management, product leadership, team building, hiring/interviewing*.

Education

2016 – 2021 **Doctor of Philosophy**, *Finance and Accounting*, Indian Institute of Management, Bangalore.
CGPA: 3.64 / 4.00

2010 – 2012 **Master of Engineering**, *Electrical Communication Engineering*, Indian Institute of Science, Bangalore.
CGPA: 6.4 / 8.0; Project Grade: A

2006 – 2010 **Bachelor of Technology**, *Electronics and Communication Engg.*, Bundelkhand Institute of Engg. and Tech., Jhansi (U.P.).
Grade: 73.6%

2004 – 2006 **Schooling (12th Standard)**, *Science*, C.B.S.E..
Grade: 88.2%

Awards and Honors

2022 **Tech Genius, Transforming the Organization, Victory Fleet**, *WNS Global Services.*

2020 **Mirae Asset Scholarship (PhD Year 5)**, *Indian Institute of Management.*

2017–2018 **Director's Merit List (PhD Year 1 and 2)**, *Indian Institute of Management.*

2016 **96.5 percentile**, *Common Aptitude Test (CAT).*

2010 **AIR 20/105,000**, *Graduate Aptitude Test in Engineering (GATE).*

2006–2007 **Merit Scholarships**, *Intermediate Examination and Engineering.*

Publications and Conference Presentations

For the complete list of research publications and conference presentations, please refer to:
`github.com/nik141088/CV/blob/main/publications_CV.pdf`