Abhishek Benny

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Data-Driven Engineer | Operational Excellence, Digitalization & Analytics | End-to-end delivery

Data-driven engineer bridging industrial operations, automation, and advanced analytics to deliver measurable performance improvements. Experienced leading end-to-end initiatives from problem framing and solution design through data pipelines/automation, modelling/analysis, validation, and executive-ready reporting. Strong in cross-functional delivery, translating ambiguous stakeholder needs into scalable, reliable tools and decisions in fast-paced environments.

Education

2022
Bachelor of Chemical Engineering
Minors in Mathematics and Chemistry
University of Minnesota – Twin Cities
Minneapolis, Minnesota, USA

2018
International Baccalaureate (IB)
Emirates International School – Meadows
Dubai, UAE

Awards

2024
Seed Production Innovation Imagine Award | First place | Bayer Global
Awarded for **realizing a $2 million per annum cost reduction** across 9 North America (NA) sites by reducing inert inputs while maintaining quality.

2025
Innovations in crop science poster contest | Runner up | Bayer NA
Academic poster on **experimental design** that sparked the discovery of new technology to reduce inert inputs.

Languages

	Spoken	Reading, Writing
English	Fluent	Fluent
French	Advanced	Advanced
German	Beginner	Beginner
Arabic	Beginner	Beginner

Passions

Automating workflows
I believe any workflow that is repeated often (< quarterly) should be standardized, then automated to optimize time for higher value creation. At Bayer, I automated testing data analysis to reduce workflow from 8 hours to < 1 hour.

Skills

Engineering consulting: operational excellence, process optimization, root-cause analysis, CAPEX/OPEX impact sizing, stakeholder management

Industrial data & automation: historian data, equipment performance monitoring, control/automation logic improvement, batch/process analytics

Data science & analytics: time-series analysis, anomaly detection, predictive modelling, experimental design, KPI development

Computer vision: image preprocessing, feature engineering, model calibration/validation, quality inspection use cases

Data engineering: Python ETL/pipelines, SQL, data modelling, database design, data quality checks, reproducible workflows

MLOps: model validation, monitoring, deployment handoff, documentation, governance/traceability

Tools: Python, SQL, Git, Tableau, PowerBI, PowerApps, Excel, PowerPoint

Communication: structured problem framing, executive level narratives, translating stakeholder needs into requirements, success metrics, and deliverables

Experience

Process Engineer – Seed Application Pilot Plant Oct 2022 - Jul 2025
Bayer CropScience LP, Grinnell, Iowa, USA

Served as a **subject matter expert** within Bayer's global continuous-improvement and innovation division, **consulting on cross-functional projects across key seed-treatment operations**. Contributed quantitative analysis, data-driven problem solving, and practical recommendations - partnering with engineering, operations, and quality stakeholders to **translate complex process challenges into actionable improvements and scalable solutions.**

- Developed and implemented a **Python computer-vision ML model** to quantitatively assess treated corn seed quality, including image-processing pipelines, database design, and a calibration interface, projected **to eliminate >90% of rework-related costs**.
- **Presented model** approach, validation results, and expected commercial impact to **global Seed Production leadership**; garnering support to **scale across major row-crop products globally**.
- Built a **Python time-series analytics** suite to **detect deviations**, **diagnose root causes**, and drive engineering/automation updates, **improving batch-to-batch dosing accuracy from 80% to 99.8%.**
- Analyzed treater dosing time-series data to optimize automation logic, **reducing time-to-steady-state from 5 minutes to 30 seconds** (90% improvement) and **improving steady-state stability by 25%.**
- Led **new product launch testing** projects with NPV > $15M, **coordinating** procurement, R&D, regulatory, and BU leadership.
- Delivered an **expedited product launch in 3 weeks** (vs typical 3 months) by orchestrating cross-functional stakeholders, **driving $2M additional cost reduction across 9 sites.**

Experience

Investment Portfolio Management Apr 2023 – Present
Self Funded

Managed a self-funded $100K systematic portfolio **across equities, options, and ETFs,** applying quantitative models and disciplined risk controls to deliver a **17% annualized return** over two years. Built repeatable workflows to research signals, backtest strategies, evaluate portfolio-level performance, and monitor drawdowns, **translating results into clear sizing and risk-management rules**. Designed, backtested, and deployed an options-premium strategy using a **Black–Scholes–based pricing model** and **news-driven volatility indicators**, generating **19% annualized return** on capital with an **80% win rate across 85 trades**.

- Built a Python-based **research engine** to manage protocols, **orchestrate repeatable research runs/workflows**, and store parameters + results in a **MySQL database** for **traceability and analysis.**
- Researched and backtested systematic strategies **(signal design, parameter sweeps, robustness checks)** on **short and medium time horizons** (intraday (5m) – quarterly).
- Built **performance and risk reporting**: returns attribution, volatility, drawdowns, Sharpe, hit rate, and trade-level analytics; tracked portfolio performance vs benchmarks.
- Implemented portfolio construction based on Robert Carver's Systematic Trading: **volatility-scaled position sizing, diversification weights, and cross-asset risk balancing**.
- Built and maintained a quantitative risk-management framework inspired by Ralph Vince's Leverage Space Model to **optimize geometric return, manage leverage, and control downside risk**.
- Developed **monitoring for data integrity and strategy drift**; documented assumptions, execution rules, and test protocols for repeatability.

Finance Manager and Treasurer Feb 2020 – Sep 2021
UMN Solar Vehicle Project, Minneapolis, MN, USA

Oversaw **financial operations, budgeting, and resource allocation** for a 100+ member student engineering organization. Focused on transparency, forecasting, and efficient fund use to **support events, competitions, and R&D projects** while **maintaining compliance** with university and sponsor requirements.

- Managed annual budget, cash flow, and **multi-source funding exceeding $500K** across sponsorships and grants.
- Created financial forecasts and expense tracking tools to **guide executive decision-making and project planning**.
- **Negotiated with sponsors and vendors** to secure materials, travel, and event funding within budget constraints.
- Navigated COVID-19 disruptions by **re-forecasting budgets, reallocating spend and adapting funding plans** to keep core programs running amid shifting constraints.
- Produced **biannual financial reports** and presented them to faculty advisors and **executive leadership** for accountability and planning.

Quality, Health, Safety and Environment Intern Jul 2021 – Aug 2021
Aujan Coca-Cola Beverages Company, Dubai, UAE

Supported **quality and operational excellence initiatives** by reviewing and reworking **standard operating procedures (SOPs)** to improve clarity, consistency, and **audit readiness**. Partnered with cross-functional stakeholders to ensure documentation and factory-floor practices aligned with **ISO 9001, FSSC 22000, and ISO/OSHAS 45000** requirements, strengthening compliance and standardization across production workflows.

Process Engineering Intern Jun 2019 – Aug 2019
Deccan Fine Chemicals Ltd., Goa, India

Research and Development Intern Jun 2017 – Aug 2017
Axio Biosolutions, Bangalore, India