

# Aayush Ostwal

Senior Software Engineer

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## Education:

- > **Indian Institute of Technology, Kanpur** 2017-21  
B.Tech (Major) in **Mechanical Engineer** | Minor in **Industrial and management engineering** 7.9 CPI  
**Courses:** Probability, Statistics, DSA, Time Series Analysis, Advanced Statistical methods for Business Analytics

## Experience:

- Qure.AI** | Sr. Software Engineer, *Bangalore* 2022-Present
  - > Enhanced RDS CPU utilization from **50%** to **<20%** through analyzing SQL-explain plans, resolving MultiXact waits, & implemented proactive monitoring and alerting mechanisms using AWS CloudWatch and Datadog, resulting in significant performance gains
  - > Slashed scan upload time by **50%** through advanced SQL query optimization and code refactoring, improving user experience.
  - > Accelerated app load times with 15 complex filters by implementing **database indexing** and optimizing **DB routing paths**
  - > Integrated Infrastructure as Code (IaC) using **AWS CDK** to standardize deployment infrastructure, managing over 30 servers
  - > Recovered **700+ GB** of storage in PostgreSQL through **effective vacuuming** and established automated cleanup processes
  - > Developed robust **data synchronization** capabilities to seamlessly transfer data from on-premise systems to cloud environments
  - > Forward engineered a robust patient tracking application for doctors, featuring advanced **scan processing**, form-based data collection, and efficient **hub-spoke routing**. Integrated Slack-based real-time communication, interactive **Metabase** dashboards, Firebase notifications, and seamless data export functionality impacting more than **7 million** lives
  - > Integrated Grafana dashboards for TAT monitoring, tasks management and generating insights for apps
  - > Engineered deployment pipelines using **Jenkins CI/CD**, enabling simultaneous deployments to **5 regions within 20 minutes**
  - > Architected **finite state machines** to automate user workflows within the application impacting more then **200K lives**

- Hilabs Inc** | Data Scientist, *Pune* 2021-22
  - > Developed an **internal provider directory** by web-scraping U.S. doctor data from over **20 insurer websites**, utilizing Selenium, Python, and Tor Onion for seamless IP rotation and evasion of scraping restrictions.
  - > Accelerated report generation for over **1 million records**, reducing processing time from **2 days to just 3 hours** by leveraging PySpark, Hadoop clusters, and advanced multi-processing techniques
  - > Enhanced data quality by identifying and eliminating over **89,000 anomalous addresses** for the Georgia market, significantly improving the accuracy of final client reports.
  - > Led **20+ sales proof-of-concepts (POCs)**, resulting in five successful agreements and one signed contract for a full-scale data validation initiative.

- Materate Education Pvt. Ltd.** | Data Analyst, *Internship* 2021-22
  - > Developed an adaptive learning algorithm and designed analytical components for the **K-10 education sector**, creating intelligent tests with automated reporting for schools, parents, and students. Analyzed test data from **5,000 students** to generate insightful, customized reports.
  - > Implemented **agglomerative clustering** techniques to segment students into distinct groups for Randomized Control Trials (RCTs), facilitating targeted learning interventions.
  - > Led the documentation and organization of the adaptive learning algorithm for a 4-week experimental study, ensuring reproducibility and clear understanding of the study's methodology.

## Publications:

- > Breaking Symmetry in Deep Learning | Published in **Towards Data Science**
- > The Art of Dimensionality Reduction | Published in **Analytics Vidhya**
- > 14 Data Visualization Plots of Seaborn | Published in **Towards Data Science**
- > Benchmark and Profile Django APIs Graphically | Published in **Medium.com**

## Technical Skills:

- > **Programming Languages:** Python, Javascript, Bash, SQL, Groovy, Scala, Pyspark, C, C++
- > **Software & Packages:** AWS (RDS, ALB, ASG, CloudFront, CloudWatch, Elastic Cache), Django, Docker, Celery, Redis, Datadog, Metabase, Grafana, AWS-CDK, Bazel, Hadoop

## Achievements:

- > Coordinated dramatics events and competitions with a team of 50+ members as **Coordinator, Dramatic Club, MnC** [2019]
- > Achieved an **All India Rank (AIR) of 943** among 220,000+ candidates in JEE Advanced, conducted by IIT Madras [2017]
- > Secured an **AIR of 1818** among over 1 million candidates in JEE Mains, conducted by IIT Madras [2017]
- > Ranked **AIR 697** nationwide in the **Kishore Vaigyanik Protsahan Yojana (KVPY)** among 40,000+ candidates [2017]
- > Attained **AIR 8** in the National Science Talent Search Examination (NSTSE) out of over 1 million candidates [2016]