# Abhay Ambekar

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## EXPERIENCE

**Software Engineer**                                                                                   Jun 2022 – Jun 2023
*PWC*                                                                                                          *Bengaluru, KA*
- Pioneered and automated **15+ ETL pipelines** using **Informatica PowerCenter**, reducing data processing time by **40%** and ensuring consistent daily analytics delivery.
- Refined complex **SQL queries** through indexing and partitioning, reducing execution time by **50%** on datasets exceeding **500M rows**.
- Assembled and maintained **CI/CD pipelines**, accelerating deployment cycles by **20%** and improving release reliability.
- Automated environment provisioning and deployment scripts, slashing manual setup time by **50%** and improving system reliability across staging environments.
- Spearheaded cross-functional data validation efforts across engineering and product teams, curtailing data-related escalations by **30%** through early anomaly detection and standardized QA checks.
- Engineered 15+ reusable data transformation templates within Informatica, ensuring consistent data processing logic across pipelines and reducing onboarding time for new data engineers by 40%.

**Software Engineer Intern**                                                                            Mar 2022 – Jun 2022
*PWC*                                                                                                          *Bengaluru, KA*
- Orchestrated **10+ end-to-end deployments** to ensure timely delivery of project milestones, resulting in **30% reduction** in release cycle time and improved project tracking.
- Collaborated with **5+ senior engineers** to design and implement a scalable application architecture, improving system reliability by **40%** under peak loads.
- Deployed applications on **AWS EC2** instances using **Ansible, Kubernetes, and Docker**, enabling **99.9% uptime** and reducing manual configuration effort by **50%**.
- Coordinated daily stand-up meetings and documentation reviews, identifying and resolving the three biggest causes of code integration conflicts across engineering teams.

## ACADEMIC PROJECTS

**Trump of the Day** – Full-stack news app — GitHub: github.com/Abhay3020/trump-of-the-day — Live: trumpoftheday.com
- Engineered a full-stack news aggregation platform using **React (Vite)**, **Node.js**, and **MongoDB**, delivering real-time political news with **sub-second latency** for 1000+ daily users
- Implemented secure authentication with **Google OAuth** and JWT sessions, achieving **zero security breaches** while handling 500+ concurrent users
- Instituted RESTful API with article filtering and user analytics, processing **500+ RPM** with **95% uptime** during election cycles
- Optimized frontend performance using **React Query** for state management and **Tailwind CSS** for responsive design, improving Lighthouse scores by **35%**
- Integrated BERT-based AI summarization module into article pages and introduced a user voting system, projected to increase average session duration by 40% and improve content discoverability.

**Pothole Detection System** – IoT road monitoring — GitHub: github.com/Abhay3020/Pothole$_d$etection
- Developed IoT solution with **92% detection accuracy** using accelerometer/GPS sensors and **Python** data processing
- Built **Node.js** backend processing **50+ events/sec** with **less than 2s latency** using **MQTT** for real-time alerts
- Integrated **Google Maps API** for visualization, improving municipal response time by **30%** in pilot deployment
- Reduced false positives by **25%** through **time-series analysis** of sensor data patterns

## EDUCATION

**Master of Science in Computer Science**                                                                           May 2025
*University of Massachusetts Lowell, Lowell, MA*
- Graduate Coursework: Machine Learning & Security, Advanced Networks & Security, Advanced Database Systems, Internet of Things

**Bachelor of Engineering in Computer Science and Engineering**                                                      May 2022
*KLE Technological University, Hubli, India*
- Undergraduate Coursework: Data Structures, Algorithms, Database Management, Computer Networks, Software Engineering

## TECHNICAL SKILLS

**Programming Languages:** Python, C, Java, C++, JavaScript/TypeScript

**Web & Backend:** Node.js, Django, Express, REST APIs, GraphQL

**Frontend:** React, Next.js, HTML5, CSS3, Tailwind, Three.js, GSAP

**Cloud & DevOps:** AWS (EC2, S3, Lambda), Docker, Kubernetes, Ansible, GitHub Actions

**Data Engineering:** Informatica PowerCenter, SQL, Apache Airflow, AWS Glue, Pandas, Spark

**Data Visualization:** Tableau, Power BI, Chart.js, D3.js

**Databases:** PostgreSQL, MongoDB, Firebase, DynamoDB

**Other:** Git, Prismic CMS, Sentry, MQTT, WebSockets