Vaibhavi Tiwari

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Summary

Experienced Data and Software Engineer with over 8 years in Data Analytics, Engineering, and Software Development for Healthcare IT and Insurance systems. Proven track record in developing data engineering pipelines, optimizing data processing frameworks, and enhancing resource utilization. Adept at leveraging advanced data engineering techniques to improve performance and accuracy. Seeking an opportunity to design and develop robust data systems and AI applications to drive business insights

Education

Montclair State University   **New Jersey, USA**
Master of Science in Computer Science

Massachusetts Institute of Technology   **Massachusetts, USA**
Micro Masters in Statistics and Data Science

National Institute of Technology   **Karnataka, India**
Master of Computer Applications

Skills

Python, JAVA, SQL, UNIX, Android, PySpark, Pandas, NumPy, MySQL, Vertica, OracleSQL, Hadoop, TensorFlow, LLM, GenAI, GCP, AWS, CI/CD, Jenkins, REST APIs, EHR Processing, JIRA, GitHub, SVN, IntelliJ, PyCharm, Figma, Kubernetes, Docker, DevOps, Agile & Kanban, Tableau, PowerBI, SAP BO, ETL, ML/AI, Databricks, Snowflake

Work Experience

Montclair State University   **New Jersey, USA**

Research Engineer   Aug 2022 - Present
- Engineered novel Cloud-Based Ratio Proportion Data Distribution Algorithm utilizing Python for developing core algorithms, Google Cloud Platform for scalable cloud infrastructure, Kubernetes for container orchestration, and Docker for containerization
- Achieved a 20% boost in efficiency by resource allocation and a 15% reduction in scheduling conflicts
- Built high-performing data processing frameworks leveraging services like Dataflow, GKE, and Cloud Monitoring
- Enforced data quality frameworks to ensure accurate data consumption across various clusters

Oracle Cerner   **Bengaluru, India**

Senior Data Engineer   Jan 2019 - Aug 2021
- Executed Data Models & Engineering Pipelines project using Snowflake, ETL, and SQL, resulting in a 30% reduction in data processing times and improved data accuracy
- Developed data engineering pipelines supporting both batch and near real-time streams to enable data collection, storage, processing, transformation, aggregation, and dissemination through heterogeneous channels
- Improved performance of patient scheduler model by 20% using data sets and star schema and relational models
- Streamlined Pharmacy and Insurance Claims processes by creating data virtualization pipelines and layers
- Designed and implemented data models and ETL process for EHR on Health Intent's cloud platform, focusing on Population Health

Cerner Corporation   **Bengaluru, India**

Software Engineer   Jan 2015 - Dec 2018
- Orchestrated high-impact Scale Factor implementation to process large datasets Revenue Cycle Analytics using Java, SQL
- Streamline and optimized data pipeline by Data caching, compression and partitioning improving processing time
- Increased efficiency by 25% by reducing map jobs via code optimization for Financial Transaction and Patients AR
- Enhanced analytics pipeline processing by 30% through time complexity optimization and parallelization
- Reduced processing time by 50% in Vertica through optimization of table structures, distributed joins, and projections
- Earned the "Most Innovative Project" award for improved efficiency of the Claims & Financial Transactions system
- Led team of 5 engineers for code review and test automation for Veteran Affairs (DoD), ensuring code quality and data integrity
- Utilized HP Fortify for test driven development, proactively mitigating vulnerabilities and preventing data breaches
- Implemented split billing across 12 healthcare pipelines by developing automation engine for billing system
- Developed and integrated CI/CD practices to streamline deployment and ensure continuous delivery in Agile incremental sprints

Reliance Money   **Indore, India**

Research Analyst   Jul 2009 - May 2010
- Managed compliant trade execution by implementing automated process flow enhancing efficiency by 20%
- Provided tailored investment recommendations to HNI clients, boosting portfolio returns by 15%
- Conducted market research for equity investments, developed visualization dashboard to improve performance by 25%

Certificates & Publications

- **IEEE CCWC 2023,** Review of Ransomware Attacks, and Data Recovery Framework using Autopsy Digital Forensics Platform
- **IEEE UEMCON 2023,** Investigating Drone Data Recovery Beyond the Obvious Using Digital Forensics(**Best Paper Award**)
- **Data Platforms**: Databricks Lakehouse, Big Data, LLM & Gen AI, Snowflake Datawarehouse & Data Sharing
- **NVIDIA**: Deep Learning Models on GPUs, Gen AI with Diffusion Models, Transformers & Large Neural Networks
- **Harvard**: Data Science Machine Learning, R Basics, Introduction to AI with Python
- **MIT**: Human Computer Interaction, Linear Models to Deep Learning, Statistical Modelling & Computation

Capstone Projects

Implementing Transformer Decoders for GPT-Like Behavior (LLM, NLP, Databricks)
- Led project for natural language processing by exploring transformer decoders
- Unraveled intricacies of transformer architectures for nuanced understanding
- Leveraging GPT API to replicate and mimic transformer decoder behavior
- Pursuing the overarching goal of comprehensive grasp for practical applications
- Bridging the gap between theoretical knowledge and practical utilization in language processing

Netflix Customer Recommendation System (Databricks, AI/ML)
- Utilized techniques for data cleaning, transformation, and modeling, including standardization and normalization
- Engineered predictive models utilizing ML algorithms to forecast preferences and refine content recommendations
- Implemented quality control protocols to ensure robust data integrity and precision throughout the pipeline
- Presented insights derived from ML-driven analyses to key stakeholders, guiding strategic decision-making

Voice Automated Advising System & GPA Calculator (Python, Java/Android OS, NLP)
- Engineered a voice-activated advising system, streamlining course enrollment and prerequisites for students
- Designed and executed a GPA calculator application, automating GPA computation
- Led the development of applications to streamline academic progress tracking, enhancing efficiency