Nihar Dwivedi

Software Engineer
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Dedicated Software Engineer with a focus on the design and implementation of scalable, high-performance distributed systems. Expert in backend development, infrastructure engineering, and cloud solutions.

WORK EXPERIENCE

SECURONIX, INC. **Dallas, TX**

Software Engineer **Apr 2022 - Present**

- Designed and implemented a standalone microservice API, successfully segregating a resource-intensive data ingestion component from the primary application framework. This strategic separation bolstered system uptime and robustness while amplifying data processing capacity.
- Initiated and advocated for pivotal architectural modifications and build process advancements, targeting an elevation in developer productivity and an enriched onboarding experience for new team members.
- Orchestrated strategic technical negotiations with AWS, addressing critical scalability issues in our Redis deployment. My advocacy and negotiation skills were instrumental in making previously inaccessible Redis instance types available in our region overnight, a move catalyzed by considering a transition to Azure for our services. This decisive action not only broadened our infrastructure options but also led to a renegotiation of our Elasticache resources, including instance sizes and reserved instance pricing, ultimately securing a significant annual cost reduction of $120,000.
- Spearheaded comprehensive cost reduction initiatives, meticulously analyzing and optimizing the total cost of ownership (TCO) for AWS cloud infrastructure, through a combination of Spark job configuration and a critical review of service capacity against utilization trends, achieved significant financial efficiencies.
- Delivered Java-based enhancements for the data ingestion engineering team, contributing to the development and delivery of new product features.
- Facilitated sprint planning to define and prioritize requirements for future development cycles.

Site Reliability Engineer **June 2021 - Mar 2022**

- Managed and optimized the data ingestion pipeline for a cloud-based Security Information and Event Management (SIEM) solution, ensuring efficient data processing and system reliability.
- Directed on-call teams, swiftly pinpointing and rectifying root causes of critical incidents and system outages, while adeptly managing communication with affected customers to maintain service confidence.
- Collaborated closely with Product and Engineering teams to detect, diagnose, and remediate system defects and stability concerns, contributing to the continuous improvement of product robustness.
- Acquired hands-on expertise in a suite of technologies, including Redis, Kafka, Spark, HDFS, HBase, Solr, and MySQL, enhancing the operational toolkit and supporting diverse system architectures.

RED HAT, INC. **Boston, MA**

Student Developer **Jan 2020 - May 2020**

- Developed an innovative machine learning model for a containerized metric alert system on the Mass Open Cloud, demonstrating cutting-edge solutions in cloud monitoring.
- Utilized Red Hat's OpenShift container platform for the effective deployment of a monitoring application integrating Grafana and Prometheus, enhancing the operational visibility of cloud resources.
- Crafted and implemented a Long Short-Term Memory (LSTM) predictive model within a JupyterHub environment utilizing Python, achieving precise forecast outcomes for selected cloud metrics with performance on par with Meta's Prophet model.
- Contributed high-quality code that underwent meticulous review and was subsequently integrated into the main project repository of Red Hat, signifying a commitment to professional standards and collaborative development practices.

EDUCATION

BOSTON UNIVERSITY

M.S. Electrical and Computer Engineering **Sep 2019 - Jan 2021**

- Relevant Coursework: Cloud Computing, Parallel Algorithms, Advanced Data Structures, Deep Learning

PROJECTS

IMAGE CAPTIONING

Course Project at BU EC523 Deep Learning **Oct 2020 - Dec 2020**

- Investigated advanced deep learning architectures for the task of Image Captioning, aiming to automatically generate relevant textual descriptions for images.
- Executed the implementation of a Transformer-based model, assessing its effectiveness in comparison to established benchmarks in image captioning algorithms.
- Conducted comprehensive training and validation of the model using the COCO 2014 dataset, ensuring robustness and accuracy of the developed system.
- Directed the optimization and evaluation of the Transformer model against baseline models such as ResNet and VGG, attaining results that approached the current state-of-the-art through meticulous model tuning.

ADDITIONAL

- Skills: Backend development, infrastructure engineering, cloud-based architectures
- Languages: Java, Python, Go
- Tools and Frameworks: AWS, Shell Scripting, SQL, Redis, Kafka, Kubernetes, Docker