Khoa Bui

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PROFESSIONAL SUMMARY

A cloud-native data infrastructure professional specializing in database administration with proven experience excelling in fast-moving, innovative organizations, and working with both "tried-and-true" and cutting-edge technologies using DevOps and Agile Methodology.

SKILLS

- Database Technologies: MySQL, MongoDB, Cassandra, Neo4j, PostgreSQL, MariaDB
- Cloud Platforms and Infrastructure: AWS (RDS, EC2, CloudFormation, S3, Redshift), GCP (Cloud SQL, Cloud Computing, Cloud Storage), Ansible, Terraform.
- Languages: Python, Bash scripting, JavaScript (MongoDB focus)
- Monitoring and Security Tools: Grafana, Prometheus, CloudWatch, LogicMonitor, DataDog.
- Security Compliance Frameworks: OWASP Risk Assessment Framework;

WORK EXPERIENCE

Database Associate   **Sep 2022 - Present**
Pythian   **Remote, CA**

Pythian is a global data and analytics professional services company that provides organizations with tailored solutions in data management, analytics, AI, and cloud services.

- Conduct cost-optimization analysis to save a GPS tracking enterprise an estimated $43,000 in yearly billing on MongoDB Atlas using the cloud cost analyst model.
- Performed MySQL and MongoDB upgrades in critical production environments with an average of 5 minutes of downtime using various methods such as blue/green deployment and snapshot upgrade when blue/green is not suitable, and Ansible for automation. Implemented thorough testing and documented rollback procedures.
- Configure and optimize 72 production AWS RDS instances, by utilizing parameter tuning and query optimization using metrics gather via CloudWatch and Performance Insights.
- Manage and optimize a sharding cluster of 42 MongoDB servers with 130 TB of data, using load balancing, index optimization, and shard balancing strategies to improve read and write performance for hundreds of thousands of GPS devices.
- Proposed an encryption-at-rest scheme for a major music streaming service with ten of millions of monthly listeners.
- Troubleshoot database, networking, and security outages, resolving issues in an average of 36 minutes using Grafana, CloudWatch, Datadog, and other customer-provided monitoring tools.
- Deployed monitoring systems with Prometheus and PMM, reducing false alerts by 97% and improving response times for on-call support.

Teaching Assistant; Research Assistant; Tutor   **May 2020 - May 2022**
Concordia University of Edmonton   **Edmonton, Alberta**

- Developed an interactive learning web environment for first-year calculus classes using JavaScript, Python, and LaTeX, incorporating features such as real-time quizzes, adaptive learning pathways, and instant feedback mechanisms, that contributed to a 16% increase in class average scores.
- Developed a reinforcement learning AI using Monte Carlo Tree Search for a research project on two-person zero-sum games, resulting in a 25% improvement in decision-making efficiency and a deeper understanding of strategic interactions among players.
- Created various frameworks to maximize the benefits of using C and Python to research LLL algorithm, elliptic curve cryptography, and game theory.

EDUCATION

M.S. of Science in Cybersecurity   **August 2024 - Present**
Georgia Institute of Technology   **Remote**

- Ongoing 4.0 GPA.

B.S. of Science in Mathematics and Information Technologies   **Sep 2018 - Apr 2022**
Concordia University of Edmonton   **Edmonton, Alberta**

- Graduated with distinction.
- Overall 3.49 GPA.

CERTIFICATIONS

- Database Management:
    - MongoDB Certification Subject Matter Expert | September 2024
    - MongoDB Certified DBA Associate | January 2023
    - MongoDB Associate Developer | January 2023
    - Neo4j Certified Professional | April 2024
    - Apache Cassandra 3 Associate Developer | December 2022
    - Apache Cassandra 3 Associate Administrator | November 2022
- Cloud & Infrastructure
    - AWS Certified SysOps Administrator – Associate | June 2024
    - AWS Certified Database – Specialty | April 2024
    - AWS Certified Cloud Practitioner | September 2023
- DevOps & Monitoring
    - PCA: Prometheus Certified Associate | November 2023
    - Linux Foundation Certified IT Associate (LFCA) | October 2022
- IT Management:
    - ITIL® 4 Foundation | August 2024

PROJECTS AND WRITINGS

- [How to Set Up a Neo4j Database](#)
    - Details the provisioning of a Neo4j environment, including methods for data cleaning with Python pandas and orchestrating data migration using bash scripting.
- **[How to Back Up and Restore a Set of Collections in MongoDB Atlas](#)**
    - Explains the creation of a MongoDB Atlas cluster lab environment and the investigation of URL and URI connections for effective data backup and restoration.
- **[Sam, the Mental Distress Detector](#)**
    - Developed an NLP project that achieved 92% accuracy in keyword analysis using Multinomial Naive Bayes and Support Vector Machine models, and included the launch of a bot utilizing Discord APIs.