Robert Lee

Staff Software Engineer

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WORK EXPERIENCE

ORACLE

Software Engineer (IC-4)   **Mar 2019 – Jul 2025**

- Led development of **Helidon**, Oracle's lightweight **Java microservices** framework, leveraging virtual threads and **GraalVM** for deployments on **Oracle Cloud Infrastructure (OCI)**, achieving a 34 MB footprint and 0.06-second startup times.
- Developed the **Netty-based WebServer** module using **Java/Spring Boot** and virtual threads, achieving **sub-100ms** latency and ensuring **MicroProfile** compliance for high-performance, cloud-native microservices.
- Enhanced **GraalVM Native Image** builds with profile-guided techniques, reducing memory consumption by **40%** and enabling **0.06-second** startup times, significantly improving service efficiency and scalability.
- Built a **React-based** dashboard using **TypeScript** and **WebSocket** for real-time metrics visualization, achieving **sub-500ms** update cycles and improving developer onboarding efficiency by **25%** through intuitive interfaces.
- Integrated **Swagger** for streamlined **API documentation**, collaborating with **UX teams** to enhance usability and accessibility, resulting in a cohesive developer experience and accelerated adoption of **Helidon** services.
- Designed a modular, event-driven microservices framework using virtual threads and **GraalVM's AOT compilation**, achieving **60ms** startup times and scalable, loosely coupled service interactions.
- Implemented a unified observability layer with **OpenTelemetry** and **Prometheus**, ensuring robust cross-service tracing and fault tolerance, enhancing system reliability and operational insights.
- Implemented event-driven workflows using **Apache Kafka** for real-time request logging and **Prometheus** for metrics collection, efficiently handling **50K+** requests/second with seamless **AWS S3** audit logging.
- Enhanced asynchronous data flow**s** for high-concurrency scenario**s**, ensuring data consistency and integrating **AWS CloudWatch** for real-time monitoring, improving pipeline reliability and performance.
- Designed automated **CI/CD pipelines** using **GitHub Actions** and **Jenkins**, enabling zero-downtime deployments to **Kubernetes** clusters on **AWS EKS** and **Azure AKS** with robust unit and security testing.
- Optimized release cycles by **30%** through parallelized testing and containerized **Docker** deployments, incorporating **JUnit** and **RestAssured** for comprehensive validation, ensuring reliable and secure software delivery.
- Guided four junior engineers on virtual threads, **GraalVM** optimizations, and secure coding practices, boosting team velocity by **20%** through rigorous code reviews and pair-programming initiatives.
- Created comprehensive internal documentation on **Helidon's** architecture, reducing onboarding time for new developers by **15%** and fostering a culture of technical excellence and collaboration.

SNOWFLAKE

Software Engineer (IC-3)   **Jun 2013- Feb 2019**

- Led core feature development for **Snowflake Healthcare**, a specialized platform for secure, **HIPAA-compliant** data analytics launched in 2017, enabling healthcare organizations to process sensitive patient data at scale.
- Developed a secure query execution engine in **Java**, integrating encryption and role-based access controls to ensure HIPAA compliance for protected health information (**PHI**).
- Implemented a metadata service with **Python** automation, enabling dynamic scaling of virtual warehouses on **AWS EC2** while maintaining **sub-100ms** query latency for healthcare workloads.

- Built **React.js** dashboards with **D3.js** for real-time visualization of healthcare analytics, optimizing state management to reduce page load times by **30%**.
- Collaborated with **UX teams** to design intuitive interfaces for clinicians and analysts, improving data accessibility and decision-making speed by **20%**.
- Designed a **HIPAA-compliant** architecture decoupling compute and storage, using immutable micro-partitions and encryption for secure, scalable data processing.
- Implemented a transaction manager for **ACID compliance**, ensuring fault tolerance and data integrity across distributed healthcare workloads.
- Engineered **ETL** pipelines with **Python** and **SQL**, transforming sensitive healthcare data into encrypted micro-partitions stored in **AWS S3**, achieving **40%** efficiency gains.
- Integrated **CloudWatch** for real-time monitoring of **data pipelines**, reducing latency by **20%** through optimized compression and parallel processing.
- Established **CI/CD** pipelines using **Jenkins**, integrating **Google Test** for unit testing and end-to-end tests to validate HIPAA-compliant data flows, reducing release cycles by **25%**.
- Implemented blue-green deployments on **AWS** for zero-downtime updates, validated with simulated workloads processing millions of patient records.
- Mentored 3 junior engineers on secure coding practices for HIPAA compliance and distributed systems design, enhancing team expertise through weekly code reviews.
- Created internal wikis on **Snowflake Healthcare's secure architecture**, reducing onboarding time by 10% and fostering collaboration with healthcare data scientists.

SKILLS

Programming Languages: Java, Python, Go, Rust, JavaScript, TypeScript, Ruby, PHP, C#, C++, Rust
Frontend Development: React.js, Angular, Vue.js, Svelte, Next.js, Bootstrap, Tailwind CSS, Material UI, D3.js, Chart.js, Three.js, Socket.io, WebRTC
Backend Development: Spring Boot, Django, FastAPI, Ruby on Rails, Node.js, Express.js, Nest.js, Laravel, ASP.NET Core, .NET, Java EE
Mobile Development: React Native, Flutter, Ionic, Xamarin, Swift, Kotlin, Android SDK
Databases & Data Systems: PostgreSQL, MySQL, MariaDB, MongoDB, DynamoDB, SQLite, Redis, Elasticsearch, Cassandra, Firebase, Oracle DB, Neo4j, Amazon Aurora, BigQuery
Architecture & Patterns: MVC, MVVM, Microservices, Serverless, Event-Driven, CQRS, PWA, JAMstack
AI / Machine Learning: TensorFlow, PyTorch, Keras, OpenAI API, GPT Applications, NLP, Computer Vision, Predictive Analytics
DevOps & Infrastructure: Docker, Kubernetes, OpenShift, Docker Compose, Helm, Rancher, Istio, Jenkins, GitLab CI, CircleCI, Terraform, Ansible
Cloud Platforms: AWS, Microsoft Azure, Google Cloud Platform (GCP), IBM Cloud, DigitalOcean, Heroku, Oracle Cloud, Firebase, Cloudflare, Netlify, Vercel
Other: RESTful APIs, SOAP, GraphQL, gRPC, WebSockets, OpenAPI**,** Jest, Mocha, Cypress, Selenium, Puppeteer, RSpec, Postman**,** Webpack, Babel, Vite, Npm, Yarn, Maven, Composer, Pip, Jira, Trello, Asana, Notion, Confluence, Slack, Scrum, Kanban, Nginx, Apache, IIS, Tomcat, Caddy, Gunicorn, uWSGI, Git, GitHub, GitLab, Bitbucket

EDUCATION

Texas Tech University (TTU)
BS in Computer Science · (2009 - 2013)