

# AMIR ALLAHVERAN

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## WORK EXPERIENCE

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### SmartEstate | Software Engineer Intern

Canada, May 2024 - Dec 2024

- Proposed and designed a new frontend architecture using React.js and TypeScript to replace PHP Blade, ensuring scalability and better performance for the application, which is currently being refactored.
- Led refactoring the frontend code from PHP Blade to React.js, improving maintainability and performance while allowing for more modern development practices.
- Set up Jest and wrote unit tests for React components, improving code reliability and ensuring that core functionality is tested before production releases.
- Automated the deployment process using GitHub Actions, reducing manual intervention and deployment time by 30%, ensuring a more efficient CI/CD pipeline.
- Deployed the entire application on AWS, leveraging EC2 and S3 to ensure high availability and scalability for handling growing traffic.
- Integrated AWS Textract to automate document processing, extracting text from uploaded documents and populating form fields on the frontend, streamlining user workflows and reducing manual data entry time by 50%.

### ArvanCloud | Site Reliability Engineer

Iran, Aug 2022 - Aug 2023

- Developed a custom Docker image similar to the provider's CloudShell, enabling users to interact with cloud environments more efficiently, improving developer experience and operational productivity by 15%.
- Reduced build times by 20% by implementing caching strategies using Nexus, leading to faster release cycles and reduced resource usage in the CI/CD pipeline.
- Executed a complex migration from OpenShift to Kubernetes using Velero for backup and restore, moving workloads from a source datacenter running OpenShift to a new datacenter where Kubernetes was deployed. The process incurred some downtime but resulted in an infrastructure with improved flexibility and scalability.
- Developed a Kubernetes operator using Golang to manage the cleanup of dangling pods, disks, and automatically cordon nodes when their state changed to "Not Ready," improving system performance, reducing resource waste by 25%, and minimizing potential disruptions from node instability.
- Introduced Capsule as a multi-tenancy solution in the Kubernetes cluster, enabling more efficient management of multiple tenants, improving resource isolation, and enhancing operational efficiency for different teams across the organization.
- Strengthened system security by implementing 25 Kyverno policies and refining firewall rules on virtual machines and Kubernetes network policies, ensuring secure user encapsulation and compliance with industry standards.
- Designed and deployed a monitoring and alerting system using VictoriaMetrics and Prometheus, reducing response times to critical incidents by 15% and decreasing false-positive alerts by 20%.
- Developed multiple Ansible roles to automate key infrastructure tasks, enhancing operational efficiency and improving consistency across deployments.

### Tapsell | Site Reliability Engineer

Iran, June 2020 - Aug 2022

- Developed and maintained automation tools using Ansible, creating over 10 custom roles that reduced manual configuration efforts by 25% and improved system patching speed by 20%, which led to a 10% reduction in production issues.
- Built and optimized CI/CD pipelines using GitLab CI and ArgoCD, automating deployments to Kubernetes clusters, reducing deployment time by 70% and improving delivery speed for critical applications by 40%.
- Deployed, maintained, and upgraded production Kubernetes clusters with zero downtime across multiple environments, supporting business continuity and ensuring reliable service availability.
- Designed and implemented a comprehensive monitoring system with Prometheus and Grafana, as well as logging through the ELK stack, improving system visibility and reducing response times for critical incidents by 30%.
- Led the setup and maintenance of large database clusters, including Cassandra, Redis, MongoDB, MySQL, and Kafka, each consisting of more than 10 nodes, ensuring high availability and optimized performance for large-scale data processing.
- Developed a customized NFS exporter to monitor each team's backup size, integrating with Prometheus and Grafana, which enabled the company to calculate infrastructure costs per team and improve resource allocation.
- Introduced and implemented Apache Druid for real-time data ingestion and analytics, setting up comprehensive monitoring and alerting using Prometheus and Grafana. Collaborated in the development of a custom Java exporter to extract and visualize critical business metrics, improving data visibility and operational insights.

- Developed and maintained RESTful APIs using Golang to support the product’s core functionality, scaling the system to handle 10,000+ monthly users, which resulted in a 20% improvement in system response time and enabled the company to onboard more customers.
- Refactored key components of the codebase written in Golang, improving maintainability and reducing processing times by 15%, allowing the engineering team to release new features 30% faster in a startup environment where speed was critical.
- Optimized MySQL database queries to handle growing amounts of data more efficiently, which reduced database query response times by 30%, enabling faster data retrieval and improved user experience as traffic grew by 50%.
- Identified and resolved high-priority production bugs that impacted critical business operations, reducing system downtime by 15% and ensuring a smooth user experience for a rapidly growing user base.

TECHNICAL SKILLS

- **Programming and Scripting:** Golang, Python, Bash
- **CI/CD and Automation:** GitLab CI/CD, GitHub Actions, ArgoCD
- **Cloud Platforms and Services:** AWS, GCP
- **Containerization and Orchestration:** Docker, Containerd, Kubernetes, Docker Swarm
- **Monitoring and Observability:** Prometheus, Grafana, AlertManager, VictoriaMetrics, ELK Stack (Elasticsearch, Logstash, Kibana)
- **Databases and Message Queues:** MySQL, PostgreSQL, MongoDB, Redis, Kafka, Cassandra
- **Infrastructure as Code (IaC):** Terraform, Ansible
- **Big Data and Distributed Systems:** Hadoop, HDFS
- **Networking and Load Balancing:** TCP/IP, DNS, NGINX, HAProxy
- **High Availability and Disaster Recovery:** Active-Active Clustering, Backup Strategies, Failover Configurations
- **Performance Tuning and Optimization:** Profiling, Resource Scaling, Capacity Planning
- **Incident Management and Troubleshooting:** Root Cause Analysis, Post-Mortem Reporting, On-call Support

PROJECTS

HDFS K8S Operator | *Golang, Kubernetes, KubeBuilder*

[HDFS Operator Repository, HDFS Kubectl Plugin Repository, HDFS Components Dockerize Repository]

- Architected and crafted a Kubernetes HDFS Operator using Golang and KubeBuilder, automating the creation, updating, scaling, and deletion of HDFS clusters in Kubernetes; reduced cluster management time by 35% and increased operational efficiency.
- Implemented custom Kubernetes CRDs (Custom Resource Definitions) to define and manage HDFS cluster components, ensuring flexibility in the cluster configuration and enhancing automated scaling processes.
- Built controllers to manage the lifecycle of HDFS components (Namenode, Datanode, etc.) with robust error handling and reconciliation mechanisms, improving the stability and resiliency of the HDFS clusters.
- Developed a Kubectl Plugin for streamlined HDFS operations, enabling users to interact with the HDFS cluster directly through the Kubernetes CLI, simplifying workflows for DevOps and SRE teams.
- Designed Dockerized HDFS components, optimized for Kubernetes, reducing startup times and improving container management across multiple environments.

Bastion Stack | *Terraform, OpenStack*

[Repository]

- Configured and deployed an OpenStack infrastructure using Terraform, featuring a bastion host and private instances. Ensured secure management and controlled access through tailored SSH access and network security settings.
- Integrated key pair generation, Cloud-Init, security groups, and network setup for efficient and secure instance management.
- Created reusable Terraform modules for Key Pair, Security Groups, Network, and Compute resources, enhancing flexibility and maintainability.

CERTIFICATIONS

- AWS Certified Solutions Architect - Associate Sep 2024
- AWS Certified Cloud Practitioner Dec 2023

EDUCATION

M.Sc. Computer Science	Calgary, Alberta, Canada
University of Calgary	Aug 2023 - Aug 2025
B.Sc Computer Engineering	Tehran, Iran
Amirkabir University of Technology	Sep 2018 - Jul 2023