Hemanth Rao Karade Nagendra

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EDUCATION

- **University of Colorado** — Boulder, USA
  Master of Science, Computer Science; GPA: 4.0/4.0   Aug 2022 - May 2024

- **R.V College of Engineering** — Bangalore, IND
  Bachelor of Computer Science and Engineering   Aug 2014 - May 2018

SKILLS SUMMARY

- **Programming Languages**: Python, Golang, JavaScript, Typescript, Java, Perl, C, C++, C#, Rust, PHP, Bash, HTML5, CSS3

- **Frameworks**: Node.js, Express.js, Flask, Django, React.js, GraphQL, .NET, Spring, RabbitMQ, Kafka, Pandas, Numpy, Perl-Moose

- **Software & Tools**: Docker, Kubernetes, Helm, Terraform, Nginix, Jenkins, Salesforce CRM, AWS, GCP, Azure, Linode, Sequelize, Sqlalchemy, Swagger, SAML, OAuth, SSO, GIT, Perforce, Grafana, Ansible, Firewalls, Tenable, Infoblox NIOS & Netmri

- **Databases**: MySQL, PostgreSQL, MongoDB, Redis, Cassandra

WORK EXPERIENCE

- **Microsoft Corporation**
  Senior Software Engineer - Tech lead - Azure PostgreSQL   Oct 2024 - Present

  ○ Spearheading the end-to-end design and implementation of mission-critical **High-Availability (HA)** features, including **physical log replication, quorum-based failover, and smart promotion logic**, directly contributing to **99.99% availability** for PostgreSQL HA customers worldwide

  ○ Redesigned HA server-health checks and failover workflows, **cutting CMS database log-IO load by 85%** and dramatically improving failover responsiveness

  ○ Re-architected the Azure PostgreSQL Flexible Server SKU-scaling pipeline, **shrinking database downtime from ≈10 minutes to ≈30 seconds** during live scale operations. Feature details

  ○ **Engineered self-healing mechanisms for Non-HA servers**, raising fleet availability to **99.95%** while reducing on-call intervention.

  ○ Drove complex, high-impact production incident investigations as part of 24x7 live-site rotations, debugging replication lag, orchestrating rapid failovers, and handling control plane instability in distributed cloud environments

  ○ Partnered across org boundaries to enhance **replication health monitoring, automate failover decision-making via state machines, and improve resilience of Service Fabric-based workflows**, contributing to higher availability SLAs for enterprise customers

- **Akamai Technologies**
  Senior Software Engineer   May 2024 - Oct 2024

  ○ **Enterprise Application Access**: **Leading design and development of a key component of Zero Trust Network Access (ZTNA) solution.** Architecting scalable systems, implementing advanced security features, enhancing stability, and creating a flexible framework for **enterprise private application access control** based on identity and context

  ○ **Spearheading the development of firewall controller** designed to regulate inbound and outbound traffic through the Linode - Akamai cloud platform

  ○ **Led a team of 2 in designing and developing policy engine as an authorization service** to Akamai cloud, Enterprise Application Access, Guardicore, and other Akamai security products

- **Arista Networks**
  Software Engineer Intern   May 2023 - Aug 2023

  ○ **OpenBMC**: Worked on enhancements on the linux distribution for management controllers used in devices such as servers and top of rack switches, also streamlined the software deployment and delivery process

  ○ Contributed to enhancing CI & CD processes to seamlessly integrate openBmc into Arista's development workflow

- **Akamai Technologies**
  Senior Software Engineer *Oct 2021 - Aug 2022*

  - **The Bulwark - Network Security Project**: **Spearheaded the end-to-end development** of an extremely scalable full-stack application for Akamai's corporate network, **single-handedly designing and developing it**. The application streamlines firewall policy implementation across **150+ locations**, managing request flow, automating approvals, implementing firewall policies, and providing visual dashboards in a **distributed environment**. This effort results in saving ≈**15,000+ hours of manual work annually** for the network operations team

  - **Salesforce sandbox post-refresh framework**: Designed and developed a framework in python to automate sandbox post-refresh activities for ≈**600 sandboxes annually** and reduced sandbox refresh time **from 3-4 days to under 6 hours**

  Software Engineer II *Oct 2019 - Sep 2021*

  - **Falcon**: Architected and developed a **scalable full-stack application** and deployed in a distributed environment. This centralized user interface benefits cross-organizational QA teams, streamlining web-based automation, API, and database testing without the need for manual script writing. This optimization results in **annual time savings of ≈5,000 hours**

  - **Patching tool**: Designed and implemented a robust solution for **identifying, managing, and patching vulnerabilities** across a network of 10,000+ virtual machines. The system's scalable architecture seamlessly accommodates various device types, contributing to **annual savings of ≈5,000 hours in manual patching** for the IT Operations team

  Software Engineer I *Jul 2018 - Sep 2019*

  - **Citadel**: Engineered a Perl-based framework for Salesforce metadata deployment, optimizing the process by fetching metadata from lower environments and expediting deployment to higher stages. Significantly **reduced deployment time from 3 days to under 15 minutes**, enhancing overall efficiency

  - **VM Build Automation**: Automated UNIX virtual machine build and provisioning workflow, seamlessly integrating with Salesforce, Infoblox NIOS, and VMware Vsphere. Achieved an **annual time savings of ≈300 hours**

  - Developed scripts and ansible playbooks to **automate manual tasks** performed by system, network, and IT operations team.

  Software Engineer Intern *Jan 2018 - Apr 2018*

  - **HostDB Tool**: Designed and developed a LAMP Stack application to efficiently retrieve details of ≈10,000 servers, process data, and present results in the desired format. **Realized annual time savings of ≈500 man-hours**

Teaching

- **University of Colorado** Boulder, USA
  Graduate Teaching Assistant - 2270: Data Structures *Aug 2022 - May 2024*

  - Conducted Data Structures weekly recitations and guided students in enhancing their problem-solving skills using C++

  - I work with Professor, other TAs, Course Managers, Course Assistants, and graders on other coursework-related responsibilities to ensure the course's learning objectives are met

Honors and Awards

- Winner at Akamai Hackathon 2021 for prototyping NLP-Based search engine for IT Tickets
- Akamai Akalades Award and **Most Valuable Player Award 2021** for project Bulwark
- Akamai Akalades Award, cash grant of **$200** for delivering the Falcon project
- Akamai Spot award, cash grant of **$150** for outstanding contribution on project Citadel