

## Revolutionizing Healthcare Application Deployment: A Kubernetes-Driven Approach

A seamless and reliable deployment and management solution for healthcare applications on-premise and cloud using Kubernetes.

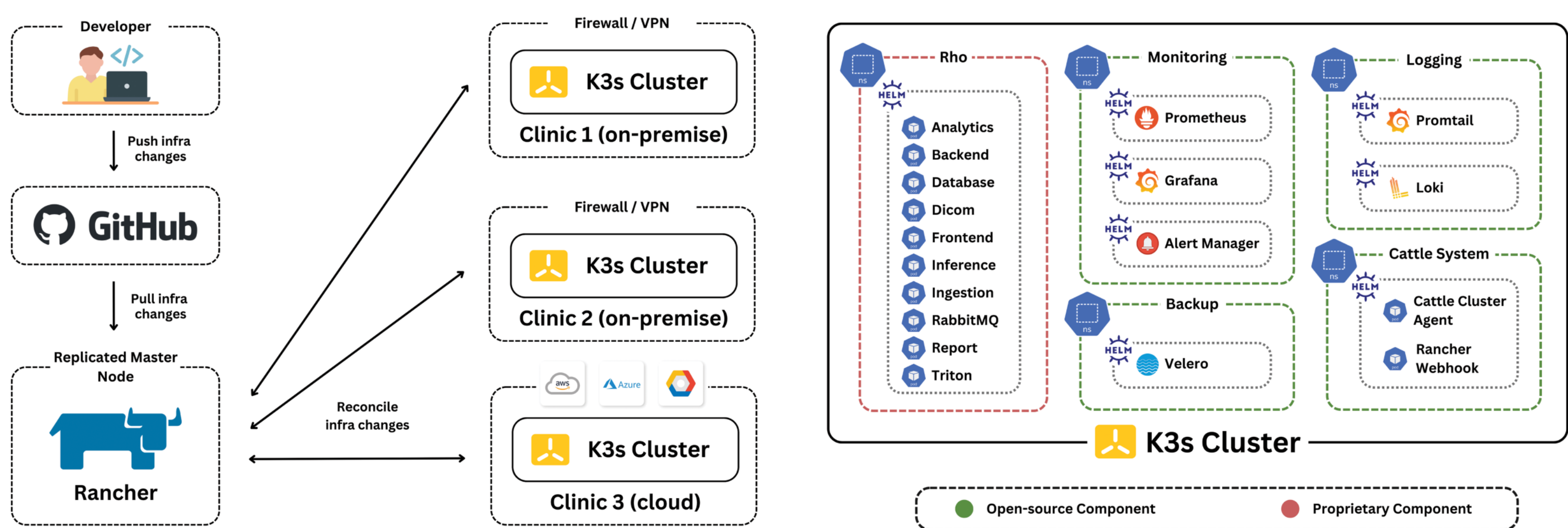
**Abdur Rahman and Sarthak Narayan**

**Eyal de Lara**

ACADEMIC SUPERVISOR

**Mark Cicero**

INDUSTRY SUPERVISOR



### PROJECT SUMMARY

The project addresses the challenges of deploying and managing medical imaging software, focusing on enhancing the deployment process and ensuring efficient management within on-premises hospital networks and the cloud. We present a novel approach that combines Kubernetes container orchestration with agent-based deployment to streamline software installations and updates behind VPN-protected networks. This approach establishes a seamless installation and updating mechanism, allowing automatic configuration adjustments across multiple Kubernetes clusters, regardless of whether they run on-premise or in the cloud. Our solution ensures scalability, high availability, and disaster recovery. Through agent-enabled Kubernetes orchestration, our project presents a refined strategy for deploying healthcare software in on-premises settings, enhancing operational efficiency, observability, and future cloud compatibility. This work contributes to the medical field's technological advancement and deployment practices. Our strategies simplify the management of complex and distributed containerized applications while maintaining heightened operational standards in the healthcare domain.

