**Abstract**

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**List of Abbreviations**

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**Chapter 1: Introduction**

1. **Background and Motivation**  
   Importance of cloud-native architectures in modern computing  
   Challenges in security, scalability, and distributed computation  
   Relevance of your research
2. **Objectives**  
   Outline the primary goals
3. **Scope of Work**  
   Brief description of the key topics covered
4. **Thesis Outline**  
   Overview of chapters

**Chapter 2: State of the art**

1. **Cloud-Native Architectures**  
   Definition and key principles  
   Existing solutions and their limitations
2. **Security in Cloud Computing**  
   Common threats and mitigation strategies  
   Role of Role-Based Access Control (RBAC)
3. **Scalability and Distributed Computation**  
   Importance and techniques  
   Overview of autoscaling and hyperparameter optimization
4. **Tools and Technologies**  
   Python  
   Kubernetes (K8s)  
   ArgoCD  
   Keycloak  
   Ray

**Chapter 3: Design and Architecture**

1. **Overall System Architecture**  
   High-level architecture diagram  
   Explanation of the components and their interactions
2. **Security Architecture**  
   Implementing RBAC on Kubernetes  
   Designing automation processes with batch scripts
3. **Scalability and Distribution Architecture**  
   Integrating Ray for autoscaling and distributed computation  
   Hyperparameter optimization
4. **Continuous Integration and Deployment**  
   Role of ArgoCD  
   Integration with Keycloak for authentication

**Chapter 4: Implementation**

1. **Setting Up Kubernetes with RBAC**  
   Detailed steps for implementing RBAC  
   Automation using batch scripts
2. **ArgoCD and Keycloak Integration**  
   Setting up Keycloak  
   Authenticating ArgoCD with Keycloak
3. **Enabling Autoscaling with Ray**  
   Ray setup and configuration  
   Implementing autoscaling  
   Hyperparameter optimization with Ray  
   Overview of Ray's pillars (Core, Tune, Serve, etc.)

**Chapter 5: Results and Evaluation**

1. **Security Evaluation**  
   Assessing the effectiveness of RBAC on Kubernetes
2. **Scalability and Performance Evaluation**  
   Metrics and benchmarks for autoscaling  
   Results of hyperparameter optimization
3. **Usability and Integration Testing**  
   Testing the integration of ArgoCD and Keycloak
4. **Discussion**  
   Interpretation of results  
   Comparison with existing solutions

**Chapter 6: Conclusion and Future Work**

1. **Summary of Findings**  
   Recap of major contributions and results
2. **Challenges and Limitations**  
   Discuss any limitations encountered during the research
3. **Future Work**  
   Potential improvements  
   Directions for further research

**Appendices**

1. **Code Listings**  
   Provide scripts and code snippets used in the implementation
2. **Configuration Files**  
   Important configuration files for Kubernetes, Ray, Keycloak, etc.
3. **Supplementary Material**  
   Additional diagrams, logs, or data supporting your research

**References**Cite all sources, papers, and tools referred to in your thesis.