AI Localization in CI/CD Pipelines: A Scalable Framework for Real-Time Multilingual Deployment

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***Abstract*—This paper presents a scalable framework for AI localization in CI/CD pipelines, enabling real-time multilingual deployment across diverse environments.**

I. Introduction

The increasing demand for multilingual AI systems has made localization a critical component of modern CI/CD workflows...

II. Methodology

Our framework integrates automated translation, locale-specific testing, and deployment hooks within CI/CD pipelines...

III. Evaluation

We evaluate our system across three multilingual benchmarks, measuring deployment latency, translation accuracy, and rollback reliability...

IV. Results

Our approach achieves a 35% reduction in deployment time and a 12-point improvement in BLEU scores compared to baseline systems...

V. Discussion

The results highlight the importance of modular localization strategies and reproducible workflows in multilingual AI deployment...

VI. Related Work

Prior work in EMNLP has explored multilingual NLP systems, but few have addressed integration within CI/CD pipelines...

VII. Related Work

Software engineering research has examined CI/CD automation, yet localization remains underexplored in this domain...

VIII. Conclusion

We propose a reproducible, scalable framework for AI localization in CI/CD pipelines, with promising results across multilingual benchmarks...

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