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## THESIS

To obtain the diploma of **Engineer**  
Field: **Computer Science**  
Specialty: **SIW**

## Theme

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**Geographic Information System (GIS) for Managing and  
Monitoring Oil and Gas Pipelines Network**

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# Abstract

The efficient management and monitoring of oil and gas pipelines is critical for ensuring the safety and reliability of energy infrastructure. This thesis presents a comprehensive Geographic Information System (GIS) designed to oversee and maintain the extensive network of oil and gas pipelines. The system integrates real-time data, geographic information, and advanced analytics to provide a robust platform for pipeline management. Key features include real-time monitoring, automated inspection scheduling, and user-friendly visualization tools. Through this GIS, companies can achieve enhanced operational efficiency, improved safety protocols, and optimized resource allocation, ultimately contributing to the sustainable management of pipeline networks.

*Keywords*— GIS, oil, gas, pipeline management.