

## **TEAM 2.5**

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#### **Abstract**

Malware, short for malicious software, represents a persistent and evolving threat to computer systems, networks, and data security. This abstract introduces the field of malware detection and classification, a vital component of modern cybersecurity. This multifaceted discipline encompasses a range of techniques, tools, and methodologies designed to identify, analyze, and categorize various forms of malware. The objective is to thwart cyber threats, mitigate risks, and ensure the integrity and availability of digital systems. This project harnesses state-of-the-art machine learning algorithms, including deep learning, decision trees, and support vector machines, to create predictive models capable of identifying malware based on distinctive features and behaviors, along with integrating cybersecurity tools for real-time monitoring and analysis, allowing for immediate threat response and containment. This fusion of machine learning with real-time cybersecurity enhances the project's ability to adapt to the dynamic nature of malware.