# Thesis Defense

Computer Science Master's Program

## "Power Efficient Hardware Acceleration for Real Time Shark Spotting"

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**Abstract:**

Unmanned aerial vehicles (UAVs), or drones, have emerged as valuable tools for enhancing safety and awareness in coastal regions through real-time shark detection. Traditionally, drone footage requires labor-intensive manual review, limiting scalability and responsiveness. For modern approaches, researchers utilize neural networks for autonomous detection. While these deep learning-based methods offer a promising alternative, computation power is restricted by the limited resources on UAV systems. This limitation is intensified by real-time system requirements that demand frequent inference execution. To address these challenges, this thesis utilizes hardware acceleration techniques on a NVIDIA Jetson Orin Nano to explore the optimal object detection model and deployment that balances power efficiency with detection accuracy for reliable shark spotting performance.

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