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Problem & Motivation

Why Traffic Sign Detection?

Traffic sign recognition is a critical component of self-driving car technology. Autonomous vehicles must reliably detect, classify, and respond to traffic signs in real time to ensure safety and compliance with driving laws.

The German Traffic Sign Detection Benchmark (GTSDB) provides a challenging real-world dataset of road environments, including varying lighting conditions, occlusions, and complex backgrounds.

Goal of This Project

The goal is to:

- Build a model that detects and classifies traffic signs using AlexNet.
- Improve understanding of convolutional neural networks.
- Apply deep learning skills learned in class.
- Visualize model predictions and performance.

Why I Chose This Topic

I chose this project because traffic sign recognition is both practical and foundational in computer vision. It ties directly into real-world applications and allows exploration of deep learning architectures.