ONTARIO TECH UNIVERSITY
FACULTY OF SCIENCE, COMPUTER SCIENCE

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Computer Vision Course Project: Park Vision: An Innovative Computer Parking Solution

by

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Abstract:

Efficient parking management is a growing challenge in many urban environments, leading to issues such as wasted time, driver frustration and increased fuel consumption. By design ParkVision is a computer vision project that rapidly finds vacant parking spots from an aerial view. By leveraging image processing, deep learning models, and real-time video analysis, this system determines the occupancy of spots by applying computer vision techniques to still frames extracted from a live video feed. The scope of this project is parking lots with straight and uniform spots. Time permitting, we may extend the project to identify irregular or angular parking spots. The goal of this system will be to provide real-time insight for drivers to improve parking traffic flow and management.

1 Introduction

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$$\bar{x} = \frac{1}{n}\sum_{i=1}^{i=n} x_i = \frac{x_1 + x_2 + \ldots + x_n}{n}$$

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$$\int_0^\infty e^{-\alpha x^2}\mathrm{d}x = \frac{1}{2}\sqrt{\int_{-\infty}^{\infty} e^{-\alpha x^2}\mathrm{d}x \int_{-\infty}^{\infty} e^{-\alpha y^2}\mathrm{d}y} = \frac{1}{2}\sqrt{\frac{\pi}{\alpha}}$$

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$$\sum_{k=0}^{\infty} a_0 q^k = \lim_{n\to\infty} \sum_{k=0}^{n} a_0 q^k = \lim_{n\to\infty} a_0 \frac{1-q^{n+1}}{1-q} = \frac{a_0}{1-q}$$

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$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-p \pm \sqrt{p^2 - 4q}}{2}$$

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$$\frac{\partial^2 \Phi}{\partial x^2} + \frac{\partial^2 \Phi}{\partial y^2} + \frac{\partial^2 \Phi}{\partial z^2} = \frac{1}{c^2} \frac{\partial^2 \Phi}{\partial t^2}$$

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2 Conclusions

Tech Report writing is an art.

A An appendix

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B Another appendix

Subsectioning in appendix

Some more text, and a list:

1. First item in a list
2. Second item in a list
3. Third item in a list
4. Fourth item in a list
5. Fifth item in a list