Assignment 3: Applications of Image Processing to Real-World Problems

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1 Introduction

The report is structured into three sections, each of which describes a different application of image processing to a real-world problem.

In **FISH Signal Counts**, we analyze fluorescence in situ hybridization (FISH) images to analyze mutations in tumor cells.

In **Circuit Board Quality Assurance**, we analyze images of circuit boards to detect defects.

In **Filled Bottles**, we analyze images of a production line to detect whether bottles are filled to the correct level.

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2 FISH Signal Counts

2.1 Theoretical Background

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3 Circuit Board Quality Assurance

3.1 Theoretical Background

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3.3 Results

4 Filled Bottles

4.1 Theoretical Background

4.2 Methodology

4.3 Results