



**TED UNIVERSITY**

Faculty of Engineering

Department of Computer Engineering

**Project Proposal**

**CMPE 491 – Senior Design Project I**

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**Name of the Project**

Figion - Dried Fig Aflatoxin Analysis

**URL of the Project Web Page**

<https://figion.tech/>

**Names of the Team Members:**

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**Project Description:**

Aflatoxins are highly toxic and carcinogenic compounds produced by Aspergillus mold species, posing a serious risk to food safety. Their formation in foodstuffs is primarily driven by inadequate environmental conditions, such as high humidity and inappropriate storage temperatures. While high-precision laboratory analyses are used for segregation, this technique creates significant operational constraints in large-scale commercial settings due to its high cost and time-consuming nature.

This project aims for the rapid, low-cost, and automatic detection of aflatoxin-contaminated dried figs through image analysis under UV light. The yellowish fluorescence exhibited by aflatoxin-contaminated areas under UV light forms the fundamental basis of this method. With the aid of a prepared dataset, accurate classification of healthy and aflatoxin-contaminated figs will be ensured. This approach aims to accelerate pre-laboratory screening tests and reduce operational costs.