

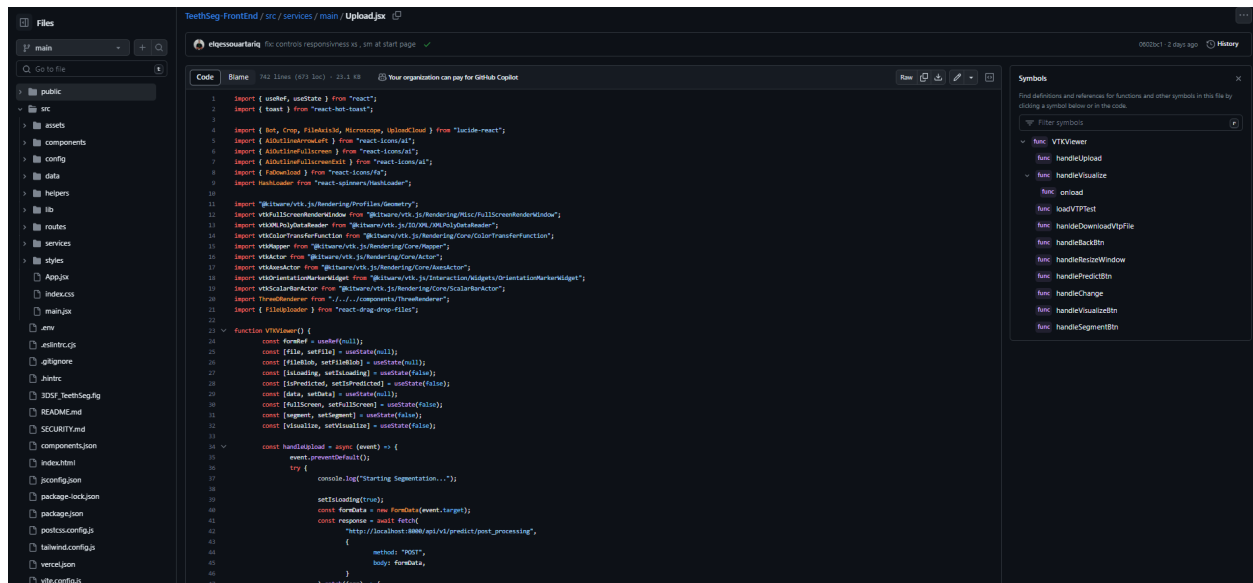
# I. Description

TeethSeg is a web application built using Vite with ReactJS and 3D libraries like Three.js and VTK.js. It utilizes the MeshSegNet deep learning model for 3D tooth segmentation. Users can create an account, sign in with Google or Github, and access the segmentation tools in the [Start](#) page. The application provides two primary features:

1. OBJ Segmentation: Upload an OBJ file, click 'Segment OBJ File', then 'Start Segmentation' to segment the file. Visualize and download the segmentation result in VTP format.
2. VTP Visualization: Visualize a VTP file by clicking 'Visualize VTP File'.

# II. Directory Structure

The front end directory includes the following elements:



Project structure

# III. Installation

To install the application, clone the project repository using the following command:

```
$ git clone https://github.com/3DSF-Internship/TeethSeg.git
```

Install the necessary dependencies by running:

```
$ npm install
```

Usage: Run the application using:

```
$ npm run dev
```

This will start the application in your default browser, accessible at <http://localhost:3000>

## IV. API Configuration:

The application communicates with the OpenAI API for chat completion for our AI assistant chatbot and Firebase API for client authentication. API configurations are managed through the Configuration classes provided by OpenAI and Firebase.

Environment Variables:

The application relies on environment variables for API access:

- |                             |                                  |
|-----------------------------|----------------------------------|
| - VITE_FIREBASE_KEY:        | < Firebase API key >             |
| - VITE_MEASUREMENT_ID:      | < Firebase measurement ID >      |
| - VITE_MESSAGING_SENDER_ID: | < Firebase messaging sender ID > |
| - VITE_APP_ID:              | < Firebase app ID >              |
| - VITE_OPENAI_KEY:          | < OpenAI API key >               |
| - VITE_ORGANIZATION_KEY:    | < OpenAI organization key >      |