

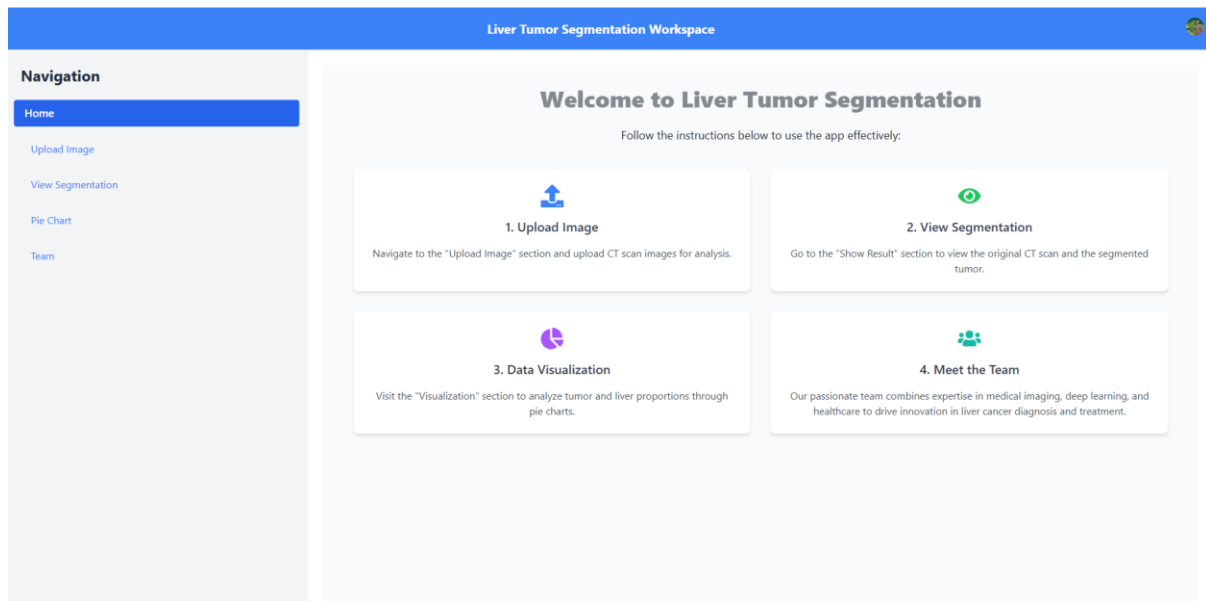
# Liver Tumour Segmentation System Using HCI Principles

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# Home Page



## HCI Principles

### 1. Visibility of System Status

- **What it means:** The app shows you where you are and what you can do next, so you always know what's going on.
- **Why it matters:** The headings and icons on each card give you clear, immediate information about what you're supposed to do.

### 2. Match between System and the Real World

- **What it means:** The app uses words and icons that make sense to you, based on what you already know.
- **Why it matters:** Familiar terms like "Upload Image" and simple icons (like a file upload or an eye) make the app easy to use because it aligns with what you expect.

### 3. Consistency and Standards

- **What it means:** The design stays the same throughout the app, so everything feels familiar and easy to understand.
- **Why it matters:** The consistent layout and icon styles make the app predictable, which makes it easier for you to use.

### 4. Aesthetic and Minimalist Design

- **What it means:** The design is simple, clean, and easy to navigate, with plenty of space and only the necessary information.
- **Why it matters:** A clear, uncluttered design helps you focus on the important tasks without distractions.

# Upload Image Page

The screenshot shows a web interface for a 'Liver Tumor Segmentation Workspace'. On the left is a navigation sidebar with links: 'Home', 'Upload Image' (highlighted in blue), 'View Segmentation', 'Pie Chart', and 'Team'. The main content area is titled 'Upload Image & Patient Details'. It contains a 'Patient Details' section with four input fields: 'Patient Name' (with placeholder 'Enter patient name'), 'Patient Age' (with placeholder 'Enter patient age'), 'Gender' (a dropdown menu currently showing 'Male'), and 'Medical History' (with placeholder 'Enter patient's medical history (optional)'). Below these is an 'Upload Image (JPG, PNG)' section featuring a dashed border for file dropping, the text 'Drag & drop .jpg or .png files here or click to upload.', a 'Browse Files' button with a file icon, and a 'Submit Details' button.

## HCI Principles

### 1. Visibility of System Status

- Provide immediate feedback after actions, such as uploading a file or submitting details.
- Example: Display a spinner or progress bar during file uploads and a confirmation message after submission.

### 2. Match Between System and the Real World

- Use clear labels like "Patient Name" and "Drag & drop .jpg or .png files here" to match user expectations.
- Replace technical terms (e.g., "Submit Details") with simpler phrases, if needed, like "Save Patient Info".

### 3. User Control and Freedom

- Implement undo/redo functionality (already in place) for modifying patient details.
- Allow users to clear uploaded files or reset the form.

### 4. Consistency and Standards

- Ensure consistency in button styles and layout.
- Use standard icons (e.g., FaFileAlt) and consistent wording like "Browse Files" across the app.

## 5. Error Prevention

- Validate file types before upload and provide descriptive error messages.
- Add placeholder text for mandatory fields to guide users on what to enter.

## 6. Flexibility and Efficiency of Use

- Support keyboard shortcuts (like Ctrl+Z for undo and Ctrl+Y for redo).

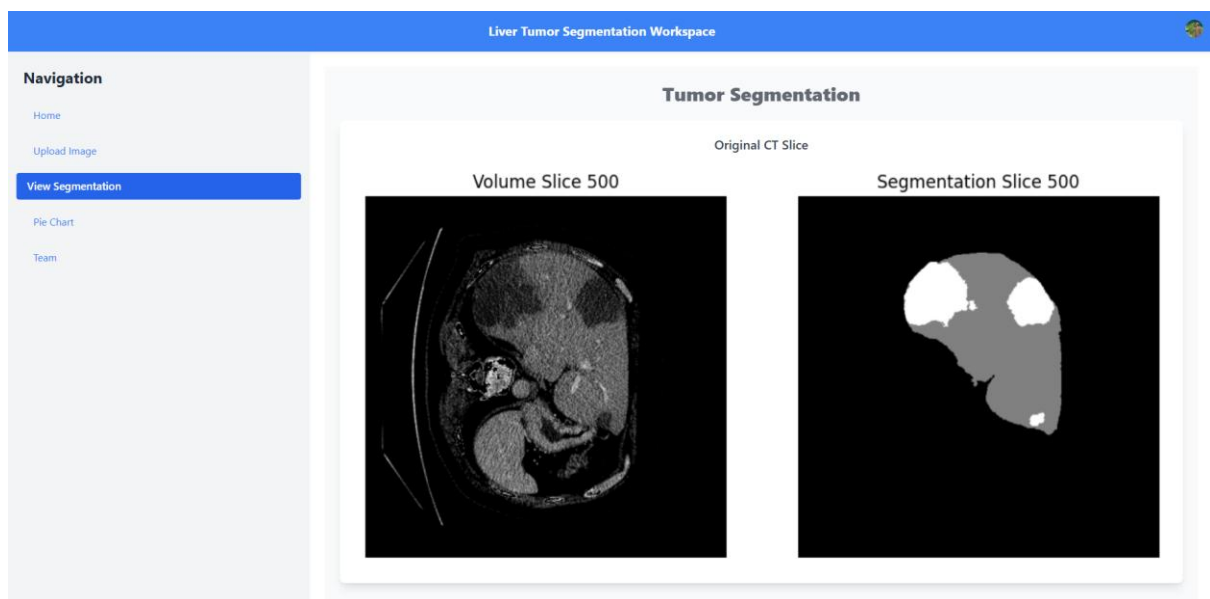
## 7. Aesthetic and Minimalist Design

- Avoid unnecessary information or elements. Keep the interface clean and visually appealing.
- Use animations (e.g., animate-pulse on the heading) sparingly to maintain simplicity.

## 8. Help Users Recognize, Diagnose, and Recover From Errors

- Show error messages like "Invalid file type. Please upload a .jpg, .jpeg, or .png image" prominently.

# View Segmentation Page



## HCI Principles

### 1. Visibility of System Status

- Actions like zooming or opening images give immediate feedback, so users know what's happening.

### 2. Match Between System and the Real World

- Common actions like "click to enlarge" and "zoom in/out" mimic real-life behaviour, making it intuitive.

### **3. User Control and Freedom**

- Users can close the modal anytime with the **"X" button** or the **Escape key** and adjust zoom levels easily.

### **4. Consistency and Standards**

- Buttons, animations, and layouts follow standard patterns, so users know what to expect.

### **5. Error Prevention**

- Zoom limits stop users from zooming too much or too little, avoiding confusion.

### **6. Recognition Rather Than Recall**

- Visible buttons and clear labels like **"Zoom In"** make actions obvious without needing to remember anything.

### **7. Flexibility and Efficiency of Use**

- Beginners see helpful buttons, while advanced users can quickly use the Escape key to close the modal.

### **8. Aesthetic and Minimalist Design**

- The design is clean and focused on essential elements, like images and zoom buttons.

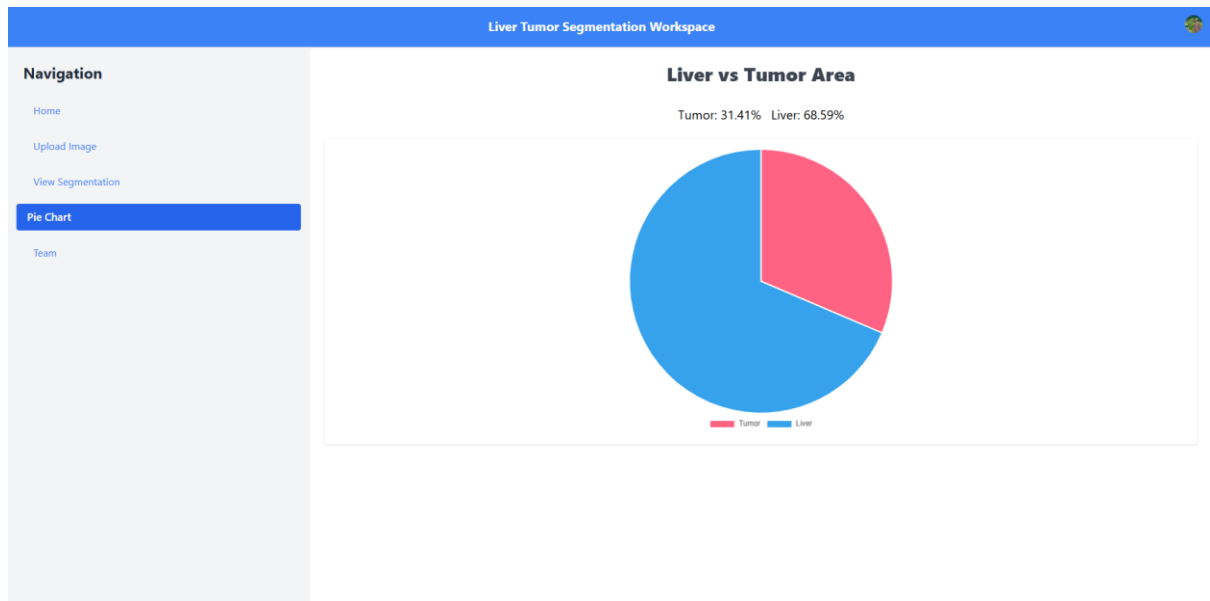
### **9. Help Users Recognize and Recover from Errors**

- Users can adjust zoom or drag images back into place if they make a mistake.

### **10. Help and Documentation**

- Simple instructions, like **"Click on images to view them in full screen"**, guide users without extra effort.

# Visualization Page



## HCI Principles

### 1. Consistency and standards:

- The chart elements use consistent color coding (red for tumor, blue for liver) to maintain clarity and standardization.

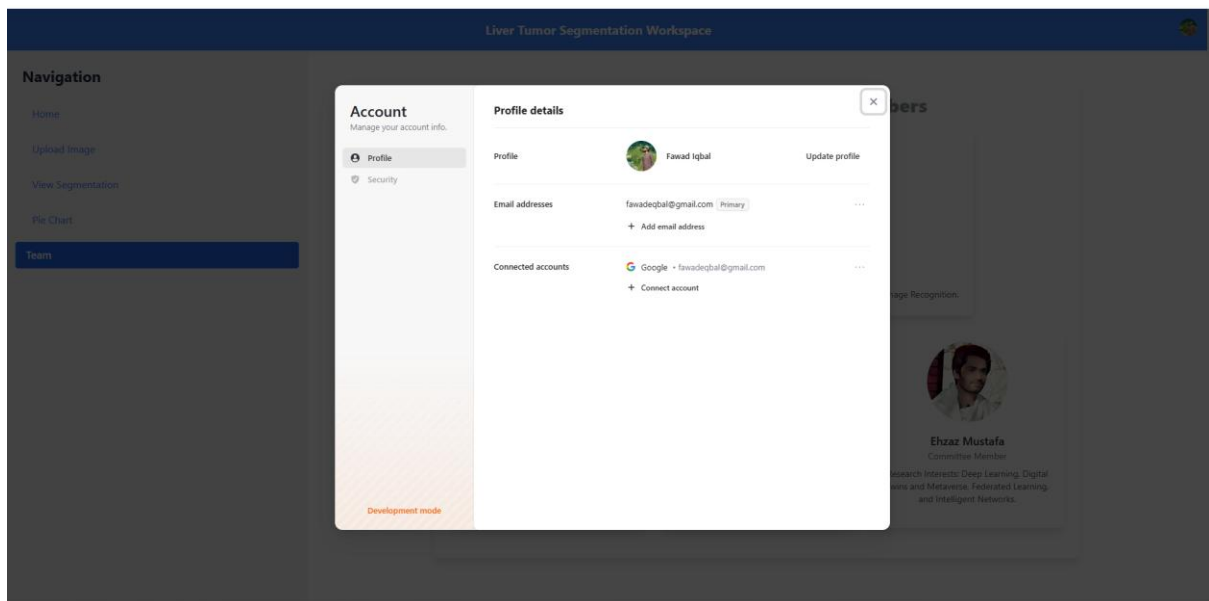
### 2. Error prevention:

- The pie chart automatically ensures that the sum of the two values (tumor and liver) always equals 100%. This prevents user errors like entering values that add up to more than 100% or less than 100%.

### 3. Aesthetic and minimalist design:

- The interface is clean and simple, focusing only on the essential elements: the chart.

# User Profile Page



## HCI Principles

### 1. Visibility of System Status

- **Feature:** The user should see their status (e.g., logged in, pending tasks) and updates in real-time.
- **Example:** A loading spinner or progress bar when updating profile information.

### 2. Match Between System and the Real World

- **Feature:** Use familiar labels and icons that match the user's real-world understanding of a profile page.
- **Example:** Common labels like "Name", "Email", "Role" for clarity.

### 3. User Control and Freedom

- **Feature:** Users can easily make changes to their profile, and undo or cancel actions if needed.
- **Example:** A "Save" and "Cancel" button that allows users to either apply or revert changes.

### 4. Consistency and Standards

- **Feature:** Use consistent design elements across the profile page and other sections of the application.
- **Example:** Same buttons, font styles, and color schemes used throughout the site.

## 5. Error Prevention

- **Feature:** Validation checks to avoid common user errors like entering incorrect email formats.
- **Example:** Real-time validation on input fields with error messages (e.g., “Please enter a valid email address”).

## 8. Aesthetic and Minimalist Design

- **Feature:** The page design should be simple, clean, and avoid unnecessary elements.
- **Example:** A profile layout with only the necessary fields and buttons visible, ensuring a clutter-free interface.

## Sign in Page

The image shows a sign-in page for 'Liver Tumor Segmentation'. The page is clean and minimalist, with a white background and a dark gray border. At the top right, there is a close button (X). The main heading is 'Sign in to Liver Tumor Segmentation', followed by a subtitle 'Welcome back! Please sign in to continue'. Below this, there are two buttons for social login: 'Apple' and 'Google'. A horizontal line with the word 'or' in the center separates these from the email login section. The email section has a label 'Email address' and a text input field with the placeholder 'Enter your email address'. Below the input field is a dark gray 'Continue' button with a right-pointing arrow. At the bottom, there is a link 'Don't have an account? Sign up'. The footer area has a light orange background with the text 'Development mode'.

Sign in to Liver Tumor Segmentation

Welcome back! Please sign in to continue

Apple Google

or

Email address

Enter your email address

Continue ▶

Don't have an account? [Sign up](#)

Development mode



