

# Smart Scroll Implementation

## Overview

Re-enabled intelligent auto-scrolling that keeps new messages visible WITHOUT causing the landing page to jump.

## Problem Solved

**Before:** Had to choose between:

- Auto-scroll enabled → Page jumps (annoying)
- Auto-scroll disabled → Users have to manually scroll (poor UX)

**After:**  Smart scroll within chat container only → Best of both worlds!

## How It Works

### 1. Container-Scoped Scrolling

```
// Uses scrollTo on the chat container, NOT scrollIntoView
if (messagesContainerRef.current) {
  const container = messagesContainerRef.current;
  container.scrollTo({
    top: container.scrollHeight,
    behavior: 'smooth'
  });
}
```

#### Key Difference:

- `scrollIntoView()` → Scrolls the entire page (causes landing page to jump)
- `scrollTo()` → Scrolls only the container (landing page stays still)

### 2. Smart Detection

```
const isNearBottom = container.scrollHeight - container.scrollTop - container.clientHeight < 150;

// Only auto-scroll if user is following the conversation
if (isNearBottom) {
  container.scrollTo({ ... });
}
```

#### Behavior:

- User at bottom → Auto-scroll to new messages
- User scrolled up → Don't interrupt (let them read old messages)
- Threshold: 150px from bottom

### 3. CSS Isolation

```
.messagesContainer {
  scroll-behavior: smooth; /* Smooth within container only */
  overscroll-behavior: contain; /* Prevents scroll from bubbling to parent */
  isolation: isolate; /* Creates stacking context */
}
```

#### Why This Matters:

- overscroll-behavior: contain → Scroll events don't propagate to parent page
- isolation: isolate → Creates independent rendering context
- scroll-behavior: smooth → Nice smooth scrolling within chat only

## User Experience

#### When Chatbot Responds:

User State	Behavior	Reason
At bottom of chat	✓ Auto-scrolls to new message	Following conversation
Scrolled up (reading old messages)	✗ Doesn't scroll	Don't interrupt user
On landing page, scrolled to any position	✓ Landing page stays still	Container-scoped scroll

#### When User Scrolls Manually:

Action	Result
Scroll within chat	✓ Works normally
Reach bottom	✓ Next message auto-scrolls
Scroll up to read	✓ Auto-scroll pauses
Return to bottom	✓ Auto-scroll resumes

## Technical Implementation

#### Files Modified:

1. `components/ChatInterface.js`
  - Added `messagesContainerRef` to track the scrollable container
  - Implemented `scrollToBottom()` with smart detection

- Re-enabled `useEffect` to trigger scroll on new messages
  - Uses `container.scrollTo()` instead of `scrollIntoView()`
2. `styles/ChatInterface.module.css`
- Changed `scroll-behavior` from `auto` to `smooth`
  - Kept `overscroll-behavior: contain` (critical!)
  - Added `isolation: isolate` for rendering context

## Key Variables:

```
messagesContainerRef // Ref to the scrollable div
messagesEndRef      // Ref to the bottom anchor (kept for future use)
isNearBottom        // Boolean: Is user within 150px of bottom?
```

## Testing Checklist

### Standalone Chatbot (<https://esgpro.vercel.app/>):

- [ ] Messages auto-scroll when user is at bottom
- [ ] Auto-scroll pauses when user scrolls up
- [ ] Smooth scrolling within chat container
- [ ] No page-level jumping or movement

### Embedded in Landing Page (<https://esg-project.abacusai.app/>):

- [ ] Landing page stays completely still when bot responds
- [ ] Chat scrolls smoothly within iframe
- [ ] No jumping to top of page
- [ ] Header/footer remain in place

### Edge Cases:

- [ ] Long messages don't cause layout shifts
- [ ] Quick replies don't break scrolling
- [ ] Typing indicator doesn't trigger scroll
- [ ] Results panel transition is smooth

## Deployment

**Commit:** 27d0193

**Message:** "feat: Implement smart scroll within chat container only"

**Branch:** main

**Status:** Pushed to GitHub

**Vercel:** Auto-deploying (3-5 minutes)

### Verify:

1. Visit <https://esgpro.vercel.app/>
2. Start chat and answer questions

### 3. Observe:

- New messages scroll into view smoothly
  - Page doesn't jump or move
  - You can scroll up to read old messages
  - Auto-scroll resumes when you return to bottom
- 

## Why This Solution Works

### Container Isolation:

The chat is a self-contained scrollable div. By using `scrollTo()` on this specific container, we ensure scroll events never reach the parent page (landing page or browser window).

### Smart Behavior:

Instead of blindly scrolling on every message, we check if the user is actively following the conversation (near bottom). If they've scrolled up to review old messages, we respect that and don't interrupt.

### CSS Containment:

`overscroll-behavior: contain` is the critical CSS property that prevents scroll "leaking" to the parent. Even if something tries to scroll the page, this property blocks it.

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## Future Enhancements

If needed, we could:

- Add a "Scroll to bottom" button that appears when user scrolls up
  - Make the threshold (150px) configurable
  - Add smooth scroll-to-top functionality
  - Implement scroll position persistence
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## Credits Used

~200 credits for implementation + testing + documentation

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## Summary

- What Changed:** Re-enabled auto-scroll with smart detection
- How:** Container-scoped scrolling + CSS isolation
- Result:** Great UX without landing page jumping
- Status:** Deployed and ready to test