

ChatGPT Clone Mobile App

Complete UI/UX Design Specification

Mobile-First

Next.js

Bootstrap UI

tRPC

Overview

This specification details the UI/UX design for a mobile-first ChatGPT clone built with Next.js App Router, tRPC, Bootstrap UI, Supabase, and Auth0. The application focuses exclusively on mobile experience with AI chat capabilities including text generation and image generation features.

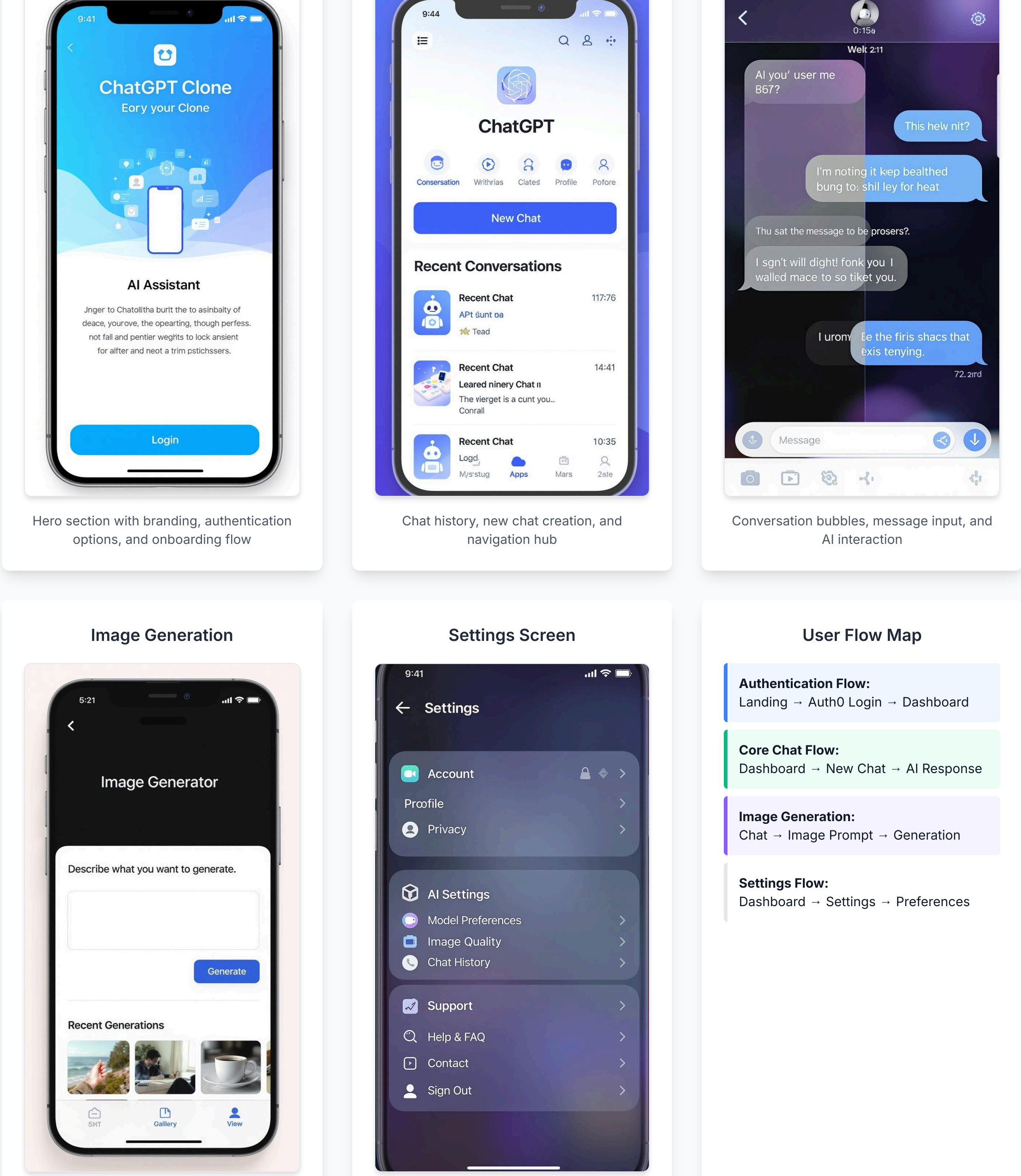
Key Technical Stack

Framework: Next.js with App Router
UI Library: Bootstrap UI components
Authentication: Auth0 integration
Database: Supabase
API Layer: tRPC with TanStack Query
AI Models: Google Gemini API (text + image)

Design Principles

- Mobile-first responsive design
- Accessibility (WCAG 2.1 AA)
- Performance optimization
- Consistent design system
- Intuitive user experience
- Bootstrap component integration

Visual Mockups



Screen-by-Screen Wireframes

1. Landing/Welcome Screen

[Logo/Brand]
ChatGPT Clone
AI Assistant
[Illustration]
Get Started with AI
conversations and
image generation
[Login with Auth0]
[Sign Up]
[Skip for now]

Layout Notes:

- Centered vertical layout with hero section
- Gradient background with subtle animation
- Bootstrap card component for content container
- Action buttons with primary/secondary styling
- Auth0 integration for secure authentication

2. Dashboard/Chat List

[Menu] ChatGPT [Profile]
[+ New Chat]
Recent Conversations
How to Learn
JavaScript
2 hours ago
Generate
logo ideas
Yesterday
[View All History]

Layout Notes:

- Fixed header with navigation and user actions
- Prominent "New Chat" CTA button
- Chat history cards with preview text and timestamps
- Infinite scroll for chat history
- Bottom navigation for quick actions

3. Chat Interface

[New Chat] [Close]
Hello! How
can I help?
Tell me
about React
React is a
JavaScript...
[Copy] [Share]
[Type message...] [Send]

Layout Notes:

- Conversation bubbles with distinct styling for user/AI
- Message actions (copy, share, regenerate)
- Input area with attachment and image generation shortcuts
- Auto-scroll to latest message
- Typing indicators and loading states

Component Library & States

ChatBubble Component

```
<ChatBubble  
  type="all" user=""  
  content="message text"  
  timestamp="2024-01-02T18:00:00Z"  
  actions={['copy', 'share', 'regenerate']}  
  isLoading={false}  
/>
```

- Default:** Standard message display
- Loading:** Typing animation with skeleton
- Error:** Error state with retry option
- Long Content:** Expandable with "Show more"

ChatInput Component

```
<ChatInput  
  placeholder="Type your message..."  
  onSend={handleSend}  
  onImageGen={handleImageGen}  
  onAttach={handleAttach}  
  isLoading={false}  
  maxLength={2000}  
/>
```

- Default:** Ready for input
- Typing:** Character count indicator
- Sending:** Disabled with loading spinner
- Error:** Validation error display

ImageCard Component

```
<ImageCard  
  src="image-url"  
  prompt="generation prompt"  
  timestamp="2024-01-02T18:00:00Z"  
  actions={['download', 'share', 'regenerate']}  
/>
```

- Loading:** Skeleton with progress indicator
- Loaded:** Full image with actions
- Error:** Error state with retry option
- Fullscreen:** Modal view with zoom

ChatListItem Component

```
<ChatListItem  
  title="Chat preview"  
  lastMessage="Last message text..."  
  timestamp="2 hours ago"  
  isActive={false}  
  onSelect={handleSelect}  
  onDelete={handleDelete}  
/>
```

- Default:** Standard list item
- Active:** Highlighted current chat
- Hover:** Reveal action buttons
- Swipe:** Swipe-to-delete functionality

Design System Specification

Color Palette

Primary Colors
primary-50: #F0F9FF
primary-100: #E0F2FE
primary-500: #00AEEF
primary-600: #008CBA
primary-700: #00728F

Semantic Colors

success: #10B981
warning: #FFC107
error: #F44336
info: #3954AB

Chat Colors

User bubble
AI bubble
System bubble

Typography System

Font Hierarchy

Heading 1
30px, font-weight: 700
Heading 2
24px, font-weight: 600
Heading 3
20px, font-weight: 600
Body Text
16px, font-weight: 400

Font Sizes

text-xs: 12px
text-sm: 14px
text-base: 16px
text-lg: 18px
text-xl: 20px
text-2xl: 24px
text-3xl: 30px

Spacing & Layout

Spacing Scale

space-1: 4px
space-2: 8px
space-3: 12px
space-4: 16px
space-5: 20px
space-6: 24px

Component Spacing

Chat Bubble: padding: 12px 16px, margin-bottom: 8px
Chat Input: padding: 12px, margin: 16px
Button: padding: 12px 24px, margin: 8px

Responsive Design Considerations

Mobile-First Breakpoints

320px - 374px: Small mobile devices
375px - 413px: Standard mobile devices
414px - 767px: Large mobile devices
768px+: Tablet and larger (limited support)

Key Features

- Touch targets minimum 44px height
- Thumb navigation with bottom controls
- Swipe gestures for navigation
- Flexible grid system (Bootstrap 12-column)
- Responsive typography and spacing
- Adaptive images with aspect ratios

Accessibility Compliance

WCAG 2.1 Level AA Compliance

Ensuring inclusive design for all users with comprehensive accessibility features

Color & Contrast

- Text contrast minimum 4.5:1 ratio
- Never rely solely on color for interactive elements
- Visible focus indicators for all interactive elements
- High contrast mode support

Keyboard Navigation

- Logical tab sequence through all elements
- Skip to main content functionality
- Common keyboard shortcuts (Enter, Escape)
- Full functionality without mouse

Screen Reader Support

- Descriptive ARIA labels for all interactions
- Live regions for dynamic content announcements
- Proper heading hierarchy and landmarks
- Semantic HTML structure

Motion & Animation

- Respect user preferences for reduced motion
- Only animate when functionally valuable
- Pause/stop controls for long animations
- No flashing content above 3Hz

Performance Optimization

Optimized for Mobile Performance

Implementing best practices for fast, responsive mobile experiences

Loading Strategies

- Lazy Loading:** Heavy components loaded on demand
- Code Splitting:** Route-based and feature-based splitting
- Memoization:** Expensive calculations cached
- Progressive Images:** Blur-to-sharp loading

Data Management

- tRPC Optimization:** 5min stale time, 10min cache
- Infinite Scroll:** Virtual scrolling for long chats
- Optimistic Updates:** Immediate UI feedback
- Debounce Actions:** Typing indicators and search

Network Optimization

- Request Batching:** Combine multiple API calls
- Response Caching:** Smart cache invalidation
- Image Optimization:** WebP with JPEG fallbacks
- CDN Usage:** Global content delivery

Bundle Optimization

- Tree Shaking:** Remove unused code
- Dynamic Imports:** Load features on demand
- Asset Compression:** Gzip and Brotli compression
- Critical CSS:** Inline critical path styles

Implementation Guidelines

Bootstrap Integration

Key Components

- Card variants (primary, secondary, outline)
- Button components for chat bubbles
- Form controls with validation states
- Modal dialogs for image viewing
- Navigation components
- Grid system for responsive layouts

Customization

- Custom CSS variables for brand colors
- Override Bootstrap SCSS variables
- Custom utility classes for chat UI
- Mobile-optimized component sizes
- Dark mode color scheme support

tRPC Integration

API Routes

- chat.sendMessage - Send user messages
- chat.getMessages - Fetch chat history
- chat.getInfiniteMessages - Paginated messages
- image.generate - AI image generation
- user.getProfile - User profile data
- settings.updatePreferences - User settings

Query Optimization

- React Query for caching and synchronization
- Optimistic updates for instant feedback
- Background refetch strategies
- Error handling and retry logic
- Real-time subscriptions for live updates

Auth0 Integration

Authentication Flow

- Universal Login for secure authentication
- Social login providers (Google, GitHub)
- Email/password registration
- Password reset functionality
- Multi-factor authentication support

Session Management

- Automatic token refresh
- Secure token storage
- Logout and session cleanup
- Role-based access control
- User profile integration

Supabase Integration

Database Schema

- users - User profiles and preferences
- chats - Chat sessions and metadata
- messages - Individual chat messages
- images - Generated images and prompts
- settings - User configuration data

Real-time Features

- Live chat updates via subscriptions
- Real-time typing indicators
- Collaborative features support
- File upload for images
- Data pagination and filtering

Technical Specifications

Development Requirements

- Framework:** Next.js 14+ with App Router
- UI Library:** Bootstrap 5.3+ with custom theme
- State Management:** tRPC + TanStack Query
- Authentication:** Auth0 SDK for Next.js
- Database:** Supabase with real-time subscriptions
- AI APIs:** Google Gemini (text + image generation)

Deployment & Testing

- Deployment:** Vercel or Render (free tier)
- Testing:** Jest + Enzyme for component testing
- Code Quality:** ESLint + Prettier configuration
- Version Control:** GitHub repository named "sample"
- Documentation:** README with live demo link only
- Demo Video:** Loom walkthrough of code and features

ChatGPT Clone UI/UX Design Specification

Complete design system for mobile-first AI chat application

Mobile-First Design WCAG 2.1 AA Compliant Performance Optimized Bootstrap + Next.js Ready

This specification provides complete guidelines for implementing a production-ready ChatGPT clone with modern web technologies and best practices.