

AI-Powered Personalized Mental Health Companion - Full Project Roadmap

Project Roadmap: AI-Powered Personalized Mental Health Companion

Project Timeline: ~14 Weeks

PHASE 1: Research & Planning (Week 1-2)

- Define Scope: input types (voice, text, facial), output types, user flow
- Gather Datasets: IMDB, Twitter Sentiment, RAVDESS, CREMA-D, FER2013, AffectNet
- Tool & Tech Stack: Python, TensorFlow, OpenCV, HuggingFace, Flask/Streamlit, Firebase

PHASE 2: Core ML Models (Week 3-6)

- Facial Emotion Recognition: FER2013, CNN, DeepFace
- Voice Emotion Detection: MFCC + RNN/LSTM (RAVDESS/CREMA-D)
- Text Sentiment Analysis: BERT/RoBERTa via HuggingFace

PHASE 3: Backend Development (Week 7-9)

- Create Flask/Streamlit API endpoints for emotion analysis
- Develop mood scoring logic
- Integrate SQLite/Firebase

PHASE 4: Frontend + Chatbot UI (Week 10-11)

- Streamlit UI or Flask + HTML/CSS
- Integrate AI Chatbot (GPT-3/DialogGPT)
- Extra Features: Quote generator, Meditation links, Resources

PHASE 5: Testing + Debugging (Week 12)

- Functional Testing, Model Evaluation, UI/UX Testing

PHASE 6: Deployment (Week 13)

- Backend: Render, Heroku, Docker (optional)
- Frontend: Streamlit, React, Netlify

PHASE 7: Launch & Documentation (Week 14)

- Project Report & PPT
- GitHub Repository with README
- Portfolio Integration & Resume Description

Bonus Features (Optional Enhancements)

- Notifications, User login, Offline mode, Coping tips using LLM