

Optimal therapeutic plan for implants

Team 11

Technology Stack:

AI: Tensorflow

Back-end: Django

Front-end: React

Database: Relational-Database (SQL)

Tech Roles:

Goia Rares Dan - Data Scientist, ML Engineer

Gavrus Dragos - ML Engineer, MLOps

Laszlo Marc - UI/UX Designer, Front-end Developer

Gulin Tudor - Full-Stack Developer

Business Roles:

Goia Rares Dan - Team Lead

Gavrus Dragos - Market Analyst

Laszlo Marc - Marketing Specialist

Gulin Tudor - Scrum Master

Backlog:

1. **User Authentication & Role Management:** Secure login for medical staff with role-based access control to manage permissions. Admins can assign roles like clinician, admin, or radiologist, ensuring each user has appropriate access to features based on their role.
2. **Patient Management System:** Track patient history with a detailed profile including personal information, medical records, and treatment history. It also allows the uploading of medical documents like consent forms and prescriptions, and integrates seamlessly with EHR systems for data transfer.
3. **CBCT Scan & Image Interpretation:** Support for X-ray and CBCT (DICOM) uploads, ensuring quick display and compatibility. Tools for medical professionals to annotate, highlight regions of interest, and AI suggestions for identifying key anatomical landmarks and concerns like low bone density.
4. **AI-Powered Implant Planning:** AI predicts the optimal number of implants and ideal positioning for dental implants based on CBCT scans. It also recommends implant dimensions by analyzing bone structure, enhancing the accuracy of treatment plans.
5. **2D Segmentation & Reconstruction:** Automatic segmentation of key dental structures like teeth and mandibular canals using advanced algorithms, with manual adjustments if needed. Panoramic and cross-sectional views are generated for precise implant planning and analysis.
6. **User Experience Enhancements:** A user-friendly, responsive interface supporting panoramic, cross-sectional, and 3D views across devices. It also includes dark mode and accessibility options to enhance usability, along with admin-specific features like role management.