ParkinSphere

Development of an Application for Multidisciplinary Care Management and Support for Parkinson's Disease

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Motivation:

Parkinson's patients face daily symptom changes and rely on input from multiple caregivers. Yet care is often fragmented, with providers lacking unified, patient-specific data.

Our goal was to build a centralized, user-friendly platform that turns patient logs into clear, role-specific visualization, improving communication, speeding decisions, and enabling more personalized care.

Main System Requirements

- Secure, role-based access for patients and caregivers
- Visualization of health data
- Custom date filters and averages
- User-friendly interface for non-technical users
- Responsive design for tablets and desktops

Challenges & Constraints

- Diverse caregiver needs → built flexible, role-based dashboards
- No Recharts experience → learned and implemented advanced visualizations
- Small screen limitations → optimized for tablets/desktops first
- Limited time → used Firebase's serverless tools to accelerate backend setup

The Solution:

We developed a responsive web-based system that transforms real Parkinson's patient data into personalize visualizations for caregivers. Each professional accesses a tailored view with relevant insights on symptoms, mood, medications, meals, and activities. The platform features a clean, user-friendly interface and secure, real-time access, using modern web technologies to support effective multidisciplinary care.

Firebase Authentication

<Recharts />

React

TypeScript

Tailwind CSS

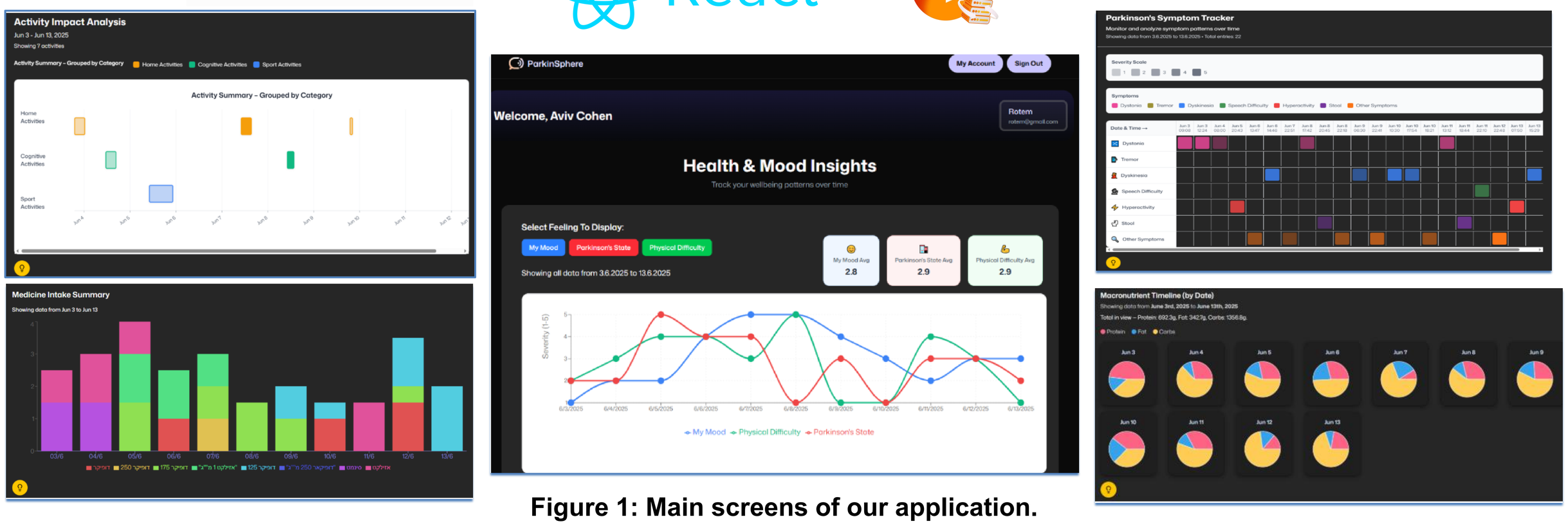

Figure 1: Main screens of our application.

Project Metrics & Achievements

- ★ 5 simple, role-based visualizations tailored to caregiver needs
- ★ Flexible time filters for personalized data exploration
- ★ Clear interface with explanations
- ★ Positive User feedback: SUS score 81
- ★ Users control access: can approve or revoke caregiver permissions anytime