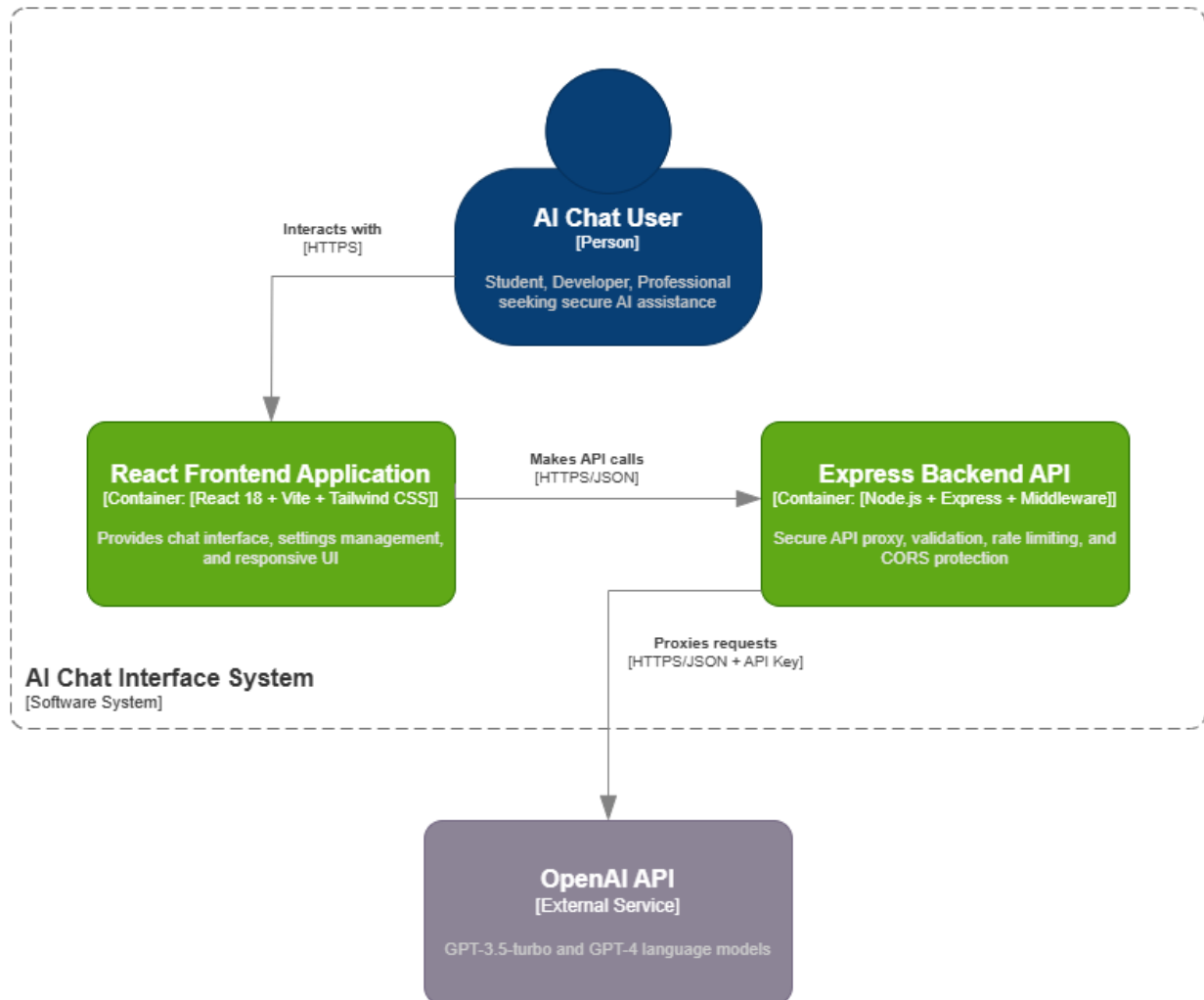**AI Chat Interface - Conceptual Design Document**

Student: Nikolas Daniel Vincenti | **Course:** DLBCSPJWD01 | **Phase:** 1 | **Date:** 02/07/2025

Application Overview

Target Users: Developers, students, and professionals requiring secure AI assistance while maintaining data privacy and API cost control.

Value Proposition: Privacy-first ChatGPT-like interface where users provide their own OpenAI API keys, ensuring conversations never pass through third-party services. Demo mode enables evaluation without API keys.

Core Functionality: Real-time conversational AI interface with secure API key handling, model selection (GPT-3.5-turbo/GPT-4), and session-based conversation history without permanent credential storage.

Security: Secure proxy pattern where API keys are backend-only, never stored permanently. Input validation, rate limiting, and HTTPS encryption protect against attacks and abuse.

Dynamic Aspects:

1. **Real-time Chat:** Interactive messaging with immediate updates, markdown rendering, loading states, responsive adaptation

2. **Settings Management:** API key validation with real-time feedback, model selection, demo mode toggle, secure session handling