

YUL-IA Platform Development Proposal

Executive Summary

We propose to develop YUL-IA, a comprehensive SaaS platform designed for higher education institutions that leverages artificial intelligence to automate and personalize the complete student lifecycle. The platform will be modular, multitenant, and scalable to support 3,000-30,000 concurrent users with up to 50,000 students.

Project Overview

YUL-IA will be a cutting-edge educational technology platform that integrates:

- AI-powered lead capture and qualification
- Automated enrollment and onboarding processes
- Academic retention and predictive analytics
- Multi-channel communication (chat, voice, avatar)
- Intelligent CRM with omnichannel support
- LMS integration capabilities

Key Features & Modules

Core Platform Components

- **Multitenant Architecture:** Logical data separation with subscription-based plans (Basic, Advanced, Premium)
- **AI Assistant Modules:** Commercial Assistant, Student Counselor, Academic Tutor
- **Intelligent CRM:** Omnichannel timeline, automation builder, analytics
- **Lead Scoring & Capture:** Multi-channel lead management with 0-100 scoring system
- **LMS Integration:** Configurable polling/webhooks with Canvas and other platforms

Technical Specifications

- **Frontend:** React 18, Vite, Tailwind CSS, WebRTC
- **Backend:** FastAPI (Python 3.12) or Node.js 20
- **Database:** PostgreSQL 15 with Redis caching
- **AI Integration:** OpenAI GPT-4 with feature flags for alternative models
- **Infrastructure:** Docker, Kubernetes, cloud-native deployment

Project Timeline: 5 Months

Milestone 1: Foundation & Infrastructure Setup (Month 1)

Budget Allocation: \$2,500 (10%)

- Project kickoff and requirement finalization
- Infrastructure as Code (IaC) setup
- Core multitenant architecture implementation
- Authentication and authorization system (RBAC)
- Basic database schema and RLS implementation

Milestone 2: Core Platform Development (Month 2)

Budget Allocation: \$7,500 (30%)

- Core CRM functionality development
- Web chat implementation
- Form builder with visual interface
- Lead scoring engine development
- WhatsApp and voice integration setup
- Basic API endpoints implementation

Milestone 3: AI Integration & Advanced Features (Month 3)

Budget Allocation: \$6,250 (25%)

- LLM integration with OpenAI GPT-4
- Vector store implementation (Pinecone/Qdrant)
- AI assistant modules development
- Client dashboard creation
- Analytics and reporting system
- Feature flags implementation

Milestone 4: LMS Integration & Specialized Modules (Month 4)

Budget Allocation: \$3,750 (15%)

- LMS integration development
- Risk detection engine implementation
- Academic tutor avatar streaming (Heygen)
- Student counselor module completion
- Automated multichannel flow builder
- Advanced analytics and predictive features

Milestone 5: Testing, Deployment & Go-Live (Month 5)

Budget Allocation: \$5,000 (20%)

- Comprehensive testing suite (unit, integration, load)
- Performance optimization and hardening
- Load testing for 50,000 concurrent users
- Security audit and compliance verification
- Production deployment
- Documentation and training delivery
- Go-live support and monitoring setup

Development Workflow

Phase 1: Planning & Architecture

- Detailed technical architecture review
- Database design and optimization
- API specification and documentation
- Security and compliance framework setup

Phase 2: Core Development

- Agile development methodology with 2-week sprints
- Continuous integration and deployment (CI/CD)
- Regular client reviews and feedback incorporation
- Progressive feature delivery and testing

Phase 3: Integration & Testing

- Third-party service integrations
- Comprehensive testing across all modules
- Performance optimization and scalability testing
- Security penetration testing

Phase 4: Deployment & Support

- Production environment setup
- Data migration and system configuration
- User training and documentation
- Post-launch support and monitoring

Technical Deliverables

- Complete source code repositories (infrastructure, backend, frontend)
- OpenAPI 3.1 documentation with Postman collections
- Helm charts and Terraform modules for deployment
- Comprehensive test suites and automated testing framework
- AI documentation including prompts, versions, and usage limits
- User manuals for both internal and external users
- Disaster recovery and contingency planning documentation
- Performance monitoring and alerting system

Success Metrics

- **Performance:** Chat latency <200ms, voice <2s
- **Scalability:** Support for 50,000 concurrent WebSocket sessions
- **Availability:** 99.5% uptime for MVP, 99.9% for production
- **Security:** OWASP top-10 compliance, GDPR/privacy law adherence

Total Project Budget: \$25,000

The project will be delivered within 5 months with a total investment of \$25,000, structured across five milestone-based payments to ensure project progression and quality delivery.

Next Steps

Upon proposal acceptance, we will:

1. Finalize technical requirements and specifications
2. Set up project management and communication channels
3. Begin infrastructure setup and core development
4. Establish regular review and feedback cycles
5. Initiate the development process according to the outlined timeline

We look forward to partnering with you to bring YUL-IA to life and revolutionize student engagement in higher education through AI-powered automation and personalization.