

Software Requirements Specification

University Freelancing Platform (CampusWorkHub)

1. System Overview

1.1 Purpose

The CampusWorkHub platform facilitates a marketplace connecting students of UM6P (freelancers) with Startgate startups (clients) for professional services, emphasizing secure transactions and verified participants.

1.2 Scope

The system encompasses user management, project matching, payment processing, and communication tools within a web-based platform.

2. Specific Requirements

2.1 User Authentication & Authorization

2.1.1 Student Verification

- **FR-1.1:** System SHALL verify student status through university email domain validation
- **FR-1.2:** System SHALL support two-factor authentication via email/SMS
- **FR-1.3:** System SHALL maintain verification status with annual renewal requirement
- **FR-1.4:** System SHALL log all verification attempts with timestamps and outcomes

2.1.2 Startup Verification

- **FR-2.1:** System SHALL validate startup credentials against Startgate database
- **FR-2.2:** System SHALL require business registration documentation
- **FR-2.3:** System SHALL implement role-based access control (RBAC)
- **FR-2.4:** System SHALL maintain audit logs of all credential updates

2.2 Profile Management

2.2.1 Student Profiles

- **FR-3.1:** System SHALL support multi-media portfolio uploads (max 50MB per file)
- **FR-3.2:** System SHALL provide skill tagging with standardized taxonomy
- **FR-3.3:** System SHALL enable custom service package creation (max 5 per profile)
- **FR-3.4:** System SHALL track profile completion percentage

2.2.2 Startup Profiles

- **FR-4.1:** System SHALL display verified company information
- **FR-4.2:** System SHALL track hiring history and satisfaction metrics
- **FR-4.3:** System SHALL support team member management with defined roles

2.3 Transaction Management

2.3.1 Payment Processing

- **FR-5.1:** System SHALL support escrow-based payment flow
- **FR-5.2:** System SHALL integrate with Stripe for payment processing
- **FR-5.3:** System SHALL automatically release funds based on milestone completion
- **FR-5.4:** System SHALL maintain detailed transaction logs for 7 years

2.3.2 Dispute Resolution

- **FR-6.1:** System SHALL provide automated dispute filing workflow
- **FR-6.2:** System SHALL implement time-bound resolution processes
- **FR-6.3:** System SHALL maintain evidence repository for disputes

3. Non-Functional Requirements

3.1 Performance

- **NFR-1.1:** System SHALL maintain page load times under 2 seconds (95th percentile)
- **NFR-1.2:** System SHALL support 1000 concurrent users minimum
- **NFR-1.3:** System SHALL achieve 99.9% uptime
- **NFR-1.4:** System SHALL process transactions within 100ms

3.2 Security

- **NFR-2.1:** System SHALL implement SSL/TLS encryption (minimum TLS 1.3)
- **NFR-2.2:** System SHALL comply with GDPR and relevant data protection regulations
- **NFR-2.3:** System SHALL perform daily automated security scans
- **NFR-2.4:** System SHALL implement rate limiting (100 requests per minute per user)

3.3 Scalability

- **NFR-3.1:** System SHALL support horizontal scaling of web servers
- **NFR-3.2:** System SHALL implement database sharding for user data
- **NFR-3.3:** System SHALL utilize CDN for static content delivery
- **NFR-3.4:** System SHALL support asynchronous processing for long-running tasks

3.4 Usability

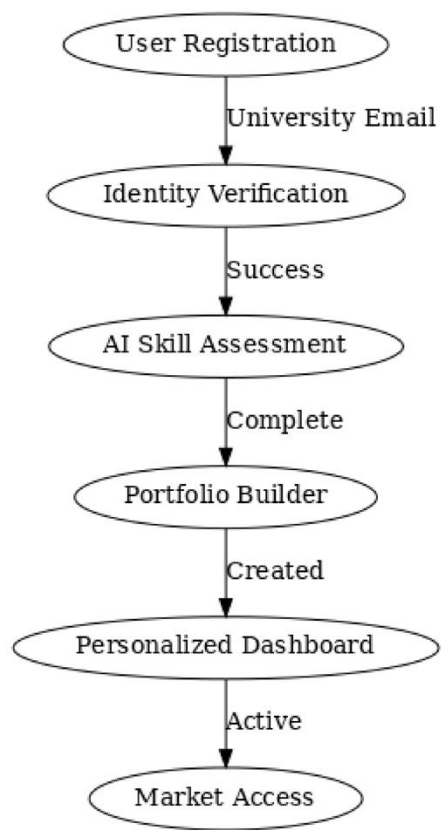
- **NFR-4.1:** System SHALL comply with WCAG 2.1 Level AA standards
- **NFR-4.2:** System SHALL support responsive design for all screen sizes
- **NFR-4.3:** System SHALL maintain consistent navigation patterns
- **NFR-4.4:** System SHALL provide keyboard accessibility

Enhanced Logic Flow & Technical Workflow

Modern University Freelancing Platform

1. Advanced User Journey Flows

1.1 Smart Onboarding Flow



1.2 Innovative Features

1.2.1 AI-Powered Skill Verification

- **Automated Code Review System**
 - Real-time code quality assessment
 - Language proficiency verification
 - Algorithm efficiency scoring
 - Security vulnerability detection

1.2.2 Dynamic Pricing Engine

- **Smart Price Suggestions**
 - Market demand analysis
 - Skill level consideration
 - Competition monitoring
 - Peak timing adjustments

1.2.3 Project Matching Algorithm

- **Intelligent Project Assignment**
 - Skill compatibility scoring
 - Schedule availability matching
 - Past performance consideration
 - Client preference alignment

2. Enhanced Technical Workflows

2.1 Real-Time Collaboration System



2.2 Advanced Payment Flows

2.2.1 Milestone-Based Payments

- **Smart Contract Integration**
 - Automated milestone verification
 - Instant fund release
 - Dispute prevention system
 - Multi-currency support

2.2.2 Performance-Based Incentives

- **Reward System**
 - Early completion bonuses
 - Quality score multipliers
 - Client satisfaction bonuses
 - Long-term collaboration rewards

3. Innovation Features

3.1 AI-Powered Project Management

- **Intelligent Deadline Tracking**
 - Smart scheduling suggestions
 - Workload balancing
 - Progress prediction
 - Risk assessment

3.2 Enhanced Communication

- **Multi-Modal Communication Hub**
 - Video conferencing integration
 - Code collaboration tools
 - Screen sharing capability
 - Automated meeting summaries

3.3 Quality Assurance Flow



4. Technical Integration Points

4.1 External Service Integration

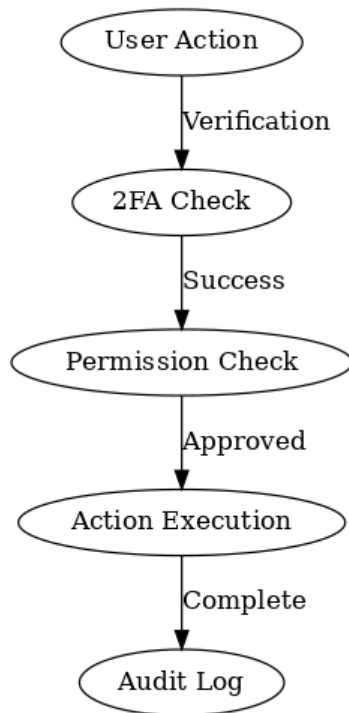
- **Third-Party Tools**
 - GitHub integration
 - Jira connectivity
 - Slack notifications
 - Google Calendar sync

4.2 Analytics and Reporting

- **Advanced Analytics Engine**
 - Performance metrics
 - Market trends
 - Success predictions
 - Revenue forecasting

5. Security Workflows

5.1 Enhanced Security Measures



5.2 Compliance Automation

- **Regulatory Compliance**
 - GDPR compliance checks
 - Data retention policies
 - Privacy protection measures
 - Regional regulation adherence

6. Innovative Features from Modern Marketplaces

6.1 AI-Enhanced Features

- **Smart Recommendations**

- Project suggestions based on skills
- Learning path recommendations
- Pricing optimization
- Team formation suggestions

6.2 Community Building

- **Engagement Features**
 - Skill-based communities
 - Mentorship programs
 - Knowledge sharing forums
 - Virtual hackathons

6.3 Growth Tools

- **Career Development**
 - Skill certification programs
 - Industry partner collaborations
 - Professional development tracking
 - Portfolio analytics