# ****COSA Alumni Management System – Requirements****

## ****1. Functional Requirements****

### ****A. Alumni Registration & Profiles****

* Alumni can **register** using email or social login (LinkedIn, Google, Facebook).
* Admin verification of new alumni accounts.
* Alumni profile includes:
  + Full name, graduation year, course/department, degree.
  + Contact info (email, phone, social media links).
  + Current job, company, city/country.
  + Profile picture.
  + Skills, achievements, awards, and interests.
* Alumni can **update their own profiles**.

### ****B. Authentication & Authorization****

* Secure login/logout.
* Password recovery and two-factor authentication (optional).
* Role-based access:
  + **Admin** (COSA committee)
  + **Alumni**
  + **Moderator/Faculty** (optional)

### ****C. Event Management****

* COSA admins can create, edit, or delete events (reunions, workshops, webinars).
* Alumni can RSVP and see attendee lists.
* Event reminders via email/notifications.
* Calendar view of past and upcoming events.

### ****D. Communication & Networking****

* Email/SMS notifications for COSA updates, events, and announcements.
* Internal messaging between alumni and COSA admin.
* Public announcements board or newsletter subscription.
* Alumni networking tools (search and connect with batchmates or professionals in the same industry).

### ****E. Donations & Fundraising****

* Alumni can **donate online** securely for school development projects.
* Admin dashboard to track donations and campaigns.
* Donation history linked to alumni profiles.

### ****F. Mentorship & Career Opportunities****

* Alumni can mentor current students or recent graduates.
* COSA can post job opportunities, internships, and career programs.
* Application and matching system for mentorship.

### ****G. Search & Analytics****

* Search and filter alumni by name, batch, profession, city, or skills.
* Admin dashboard with analytics:
  + Alumni statistics (total alumni, engagement rate)
  + Donations analytics
  + Event participation reports
  + Most active alumni

### ****H. Admin Panel****

* Manage alumni profiles and verify new registrations.
* Manage events, donations, and news posts.
* Generate reports and export data.
* Configure COSA settings (departments, batches, categories).

### ****I. Security & Privacy****

* GDPR and local data privacy compliance.
* Secure storage of alumni data.
* Admin-only access for sensitive information.

## ****2. Non-Functional Requirements****

* **Scalability:** Must handle thousands of alumni.
* **Performance:** Fast search and page load times.
* **Availability:** Cloud-hosted with backups and high uptime.
* **Mobile-friendly:** Fully responsive design.
* **Accessibility:** WCAG-compliant for all users.
* **Maintainability:** Modular code for easy updates.

## ****3. Technical Requirements****

* **Frontend:** React.js or Vue.js for responsive UI.
* **Backend:** Django (Python) recommended for its robust admin and authentication features.
* **Database:** PostgreSQL or MySQL for structured alumni data.
* **Authentication:** Django auth + social OAuth.
* **Email Service:** SendGrid, AWS SES, or SMTP server.
* **File Storage:** AWS S3 for photos/documents or local storage for development.
* **Deployment:** Docker + cloud hosting (AWS/GCP/Azure).
* **Analytics:** Built-in dashboard + optional Google Analytics integration.

## ****Optional Modern Features****

* Mobile app for iOS and Android.
* AI-powered alumni suggestions and smart networking.
* Chatbot for FAQs and quick assistance.
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