Search Service - API Documentation

Base URL: `http://localhost:8011/api/v1`
Version: 1.0.0

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Search Endpoints

1. Universal Search

Endpoint: `POST /api/v1/search`
Description: Search across all content types
Authentication: Optional

Request Body:

```
{
  "query": "mission africa",
  "filters": {
    "document_type": "article",
    "language": "en",
    "author": "John Doe",
    "status": "published"
  },
  "sort_by": "relevance",
  "sort_order": "desc",
  "page": 1,
  "page_size": 10
}
```

Response:

```
{
  "results": [
    {
      "id": 1,
      "document_id": 123,
      "document_type": "article",
      "title": "Mission Work in Africa",
      "content_preview": "...mission <mark>africa</mark>...",
      "language": "en",
      "author": "John Doe",
      "created_at": "2024-12-01T10:00:00Z",
      "relevance_score": 0.95
    }
  ],
  "total": 42,
  "page": 1,
  "page_size": 10,
  "total_pages": 5
}
```

2. Search Articles

Endpoint: `POST /api/v1/search/articles`
Description: Search specifically for articles
Authentication: Optional

Request Body:

```
{
  "query": "evangelism",
  "page": 1,
  "page_size": 10
}
```

3. Search Projects

Endpoint: `POST /api/v1/search/projects`
Description: Search for projects
Authentication: Optional

4. Search People

Endpoint: `POST /api/v1/search/people`
Description: Search for people/missionaries
Authentication: Optional

5. Search Partners

Endpoint: `POST /api/v1/search/partners`
Description: Search for partner organizations
Authentication: Optional

6. Advanced Search

Endpoint: `POST /api/v1/search/advanced`
Description: Advanced search with complex filters
Authentication: Optional

Request Body:

```
{
  "query": "missions",
  "filters": {
    "document_types": ["article", "project"],
    "languages": ["en", "fr"],
    "date_range": {
      "start": "2024-01-01",
      "end": "2024-12-31"
    },
    "tags": ["evangelism", "training"]
  },
  "boost": {
    "title": 2.0,
    "content": 1.0
  }
}
```

Indexing Endpoints

7. Index Single Document

Endpoint: `POST /api/v1/indexing/index`
Description: Index a single document
Authentication: Required

Request Body:

```
{
  "document_id": 123,
  "document_type": "article",
  "title": "Understanding Missions",
  "content": "Full article content...",
  "language": "en",
  "author": "Jane Smith",
  "status": "published",
  "metadata": {
    "tags": ["missions", "training"],
    "category": "Education"
  }
}
```

Response:

```
{
  "id": 1,
  "document_id": 123,
  "document_type": "article",
  "title": "Understanding Missions",
  "indexed_at": "2024-12-25T10:00:00Z"
}
```

8. Bulk Index

Endpoint: `POST /api/v1/indexing/bulk`
Description: Index multiple documents at once
Authentication: Required

Request Body:

```json
{
  "documents": [
    {
      "document_id": 1,
      "document_type": "article",
      "title": "Article 1",
      "content": "Content 1",
      "language": "en"
    },
    {
      "document_id": 2,
      "document_type": "article",
      "title": "Article 2",
      "content": "Content 2",
      "language": "fr"
    }
  ]
}
```

Response:

```json
{
  "job_id": 42,
  "indexed": 2,
  "failed": 0,
  "errors": []
}
```

9. Update Document

Endpoint: `PUT /api/v1/indexing/update/{document_id}`
Description: Update an indexed document
Authentication: Required

Request Body:

```json
{
  "title": "Updated Title",
  "content": "Updated content",
  "status": "published"
}
```

10. Delete Document

Endpoint: `DELETE /api/v1/indexing/delete/{document_id}`
Description: Remove document from index
Authentication: Required

Response:

```
{
  "message": "Document deleted successfully",
  "document_id": 123
}
```

11. Reindex Service

Endpoint: `POST /api/v1/indexing/reindex/{service}`
Description: Trigger reindexing from external service
Authentication: Required
Services: `content`, `partners`, `projects`, `social_media`

Response:

```
{
  "job_id": 42,
  "service": "content",
  "status": "started",
  "estimated_documents": 1000
}
```

12. Get Index Statistics

Endpoint: `GET /api/v1/indexing/stats`
Description: Get indexing statistics

Response:

```
{
  "total_documents": 5420,
  "by_type": {
    "article": 3200,
    "project": 1500,
    "person": 500,
    "partner": 220
  },
  "by_language": {
    "en": 3000,
    "fr": 1500,
    "es": 920
  },
  "last_indexed": "2024-12-25T09:30:00Z",
  "index_size": "2.3 GB"
}
```

13. List Index Jobs

Endpoint: `GET /api/v1/indexing/jobs`
Description: List all index jobs

Query Parameters:
- `status` (optional): Filter by status
- `limit` (optional): Limit results (default: 50)

Response:

```
[
  {
    "id": 42,
    "job_type": "full_reindex",
    "status": "completed",
    "total_documents": 1000,
    "processed_documents": 1000,
    "failed_documents": 0,
    "started_at": "2024-12-25T08:00:00Z",
    "completed_at": "2024-12-25T08:15:00Z"
  }
]
```

14. Get Job Status

Endpoint: `GET /api/v1/indexing/jobs/{job_id}`
Description: Get detailed job status

Response:

```
{
  "id": 42,
  "job_type": "full_reindex",
  "status": "in_progress",
  "total_documents": 1000,
  "processed_documents": 650,
  "failed_documents": 2,
  "progress_percentage": 65.0,
  "errors": [
    {"document_id": 123, "error": "Invalid format"}
  ],
  "started_at": "2024-12-25T08:00:00Z",
  "estimated_completion": "2024-12-25T08:20:00Z"
}
```

Autocomplete Endpoints

15. Get Suggestions

Endpoint: `GET /api/v1/autocomplete/suggestions`
Description: Get autocomplete suggestions

Query Parameters:
- `query` (required): Search query prefix
- `language` (optional): Filter by language
- `limit` (optional): Max suggestions (default: 10)

Response:

```json
[
  {
    "suggestion": "missions in africa",
    "usage_count": 45,
    "language": "en"
  },
  {
    "suggestion": "missionary training",
    "usage_count": 32,
    "language": "en"
  }
]
```

16. Get Popular Searches

Endpoint: `GET /api/v1/autocomplete/popular`
Description: Get most popular searches

Query Parameters:
- `language` (optional): Filter by language
- `limit` (optional): Max results (default: 10)

Response:

```json
[
  {
    "query": "missions",
    "count": 1250,
    "language": "en"
  },
  {
    "query": "evangelism",
    "count": 980,
    "language": "en"
  }
]
```

17. Get Recent Searches

Endpoint: `GET /api/v1/autocomplete/recent`
Description: Get user's recent searches
Authentication: Required

Query Parameters:
- `limit` (optional): Max results (default: 10)

Response:

```
[
  {
    "query": "bible translation",
    "searched_at": "2024-12-25T09:45:00Z"
  },
  {
    "query": "church planting",
    "searched_at": "2024-12-25T09:30:00Z"
  }
]
```

18. Add Suggestion

Endpoint: `POST /api/v1/autocomplete/suggestions`
Description: Add a new suggestion
Authentication: Required

Request Body:

```
{
  "suggestion": "new search term",
  "language": "en"
}
```

Facet Endpoints

19. Get All Facets

Endpoint: `GET /api/v1/facets`
Description: Get all available facets with counts

Query Parameters:
- `query` (optional): Filter facets by search query
- Various filter parameters

Response:

```json
{
  "document_types": [
    {"type": "article", "count": 3200},
    {"type": "project", "count": 1500},
    {"type": "person", "count": 500}
  ],
  "languages": [
    {"language": "en", "count": 3000},
    {"language": "fr", "count": 1500},
    {"language": "es", "count": 920}
  ],
  "authors": [
    {"author": "John Doe", "count": 245},
    {"author": "Jane Smith", "count": 189}
  ],
  "statuses": [
    {"status": "published", "count": 4800},
    {"status": "draft", "count": 620}
  ]
}
```

20. Get Document Type Facets

Endpoint: `GET /api/v1/facets/document-types`
Description: Get document type facets

Response:

```json
[
  {"type": "article", "count": 3200},
  {"type": "project", "count": 1500},
  {"type": "person", "count": 500},
  {"type": "partner", "count": 220}
]
```

21. Get Language Facets

Endpoint: `GET /api/v1/facets/languages`
Description: Get language facets

Response:

```json
[
  {"language": "en", "name": "English", "count": 3000},
  {"language": "fr", "name": "French", "count": 1500},
  {"language": "es", "name": "Spanish", "count": 920}
]
```

22. Get Author Facets

Endpoint: `GET /api/v1/facets/authors`
Description: Get author facets

Response:

```json
[
  {"author": "John Doe", "count": 245},
  {"author": "Jane Smith", "count": 189},
  {"author": "Bob Johnson", "count": 156}
]
```

Analytics Endpoints

23. Get Popular Queries

Endpoint: `GET /api/v1/analytics/popular-queries`
Description: Get most popular search queries

Query Parameters:
- `days` (optional): Time period (default: 30)
- `limit` (optional): Max results (default: 20)

Response:

```json
[
  {
    "query": "missions",
    "count": 1250,
    "avg_results": 42,
    "avg_response_time": 0.085
  },
  {
    "query": "evangelism",
    "count": 980,
    "avg_results": 35,
    "avg_response_time": 0.092
  }
]
```

24. Get Zero-Result Queries

Endpoint: `GET /api/v1/analytics/zero-results`
Description: Get queries that returned no results

Query Parameters:
- `days` (optional): Time period (default: 30)
- `limit` (optional): Max results (default: 20)

Response:

```json
[
  {
    "query": "obscure search term",
    "count": 15,
    "last_searched": "2024-12-25T09:00:00Z"
  }
]
```

25. Get Search Metrics

Endpoint: `GET /api/v1/analytics/metrics`
Description: Get overall search metrics

Query Parameters:
- `days` (optional): Time period (default: 30)

Response:

```
{
  "total_searches": 15420,
  "unique_queries": 3250,
  "avg_response_time": 0.089,
  "zero_result_rate": 0.08,
  "top_languages": [
    {"language": "en", "count": 10000},
    {"language": "fr", "count": 3500}
  ],
  "peak_hours": [
    {"hour": 14, "count": 1250},
    {"hour": 10, "count": 1100}
  ]
}
```

Common Models

SearchRequest

```
{
  "query": "string (required)",
  "filters": {
    "document_type": "string",
    "language": "string",
    "author": "string",
    "status": "string"
  },
  "sort_by": "relevance|created_at|updated_at",
  "sort_order": "asc|desc",
  "page": 1,
  "page_size": 10
}
```

SearchResult

```json
{
  "id": "integer",
  "document_id": "integer",
  "document_type": "string",
  "title": "string",
  "content_preview": "string",
  "language": "string",
  "author": "string",
  "created_at": "datetime",
  "relevance_score": "float"
}
```

IndexDocument

```json
{
  "document_id": "integer (required)",
  "document_type": "string (required)",
  "title": "string (required)",
  "content": "string (required)",
  "language": "string (required)",
  "author": "string",
  "status": "string",
  "metadata": {}
}
```

Error Responses

400 Bad Request

```json
{
  "detail": "Invalid search parameters"
}
```

401 Unauthorized

```json
{
  "detail": "Authentication required"
}
```

404 Not Found

```json
{
  "detail": "Document not found"
}
```

422 Validation Error

```json
{
  "detail": [
    {
      "loc": ["body", "query"],
      "msg": "field required",
      "type": "value_error.missing"
    }
  ]
}
```

500 Internal Server Error

```json
{
  "detail": "Internal server error"
}
```

Rate Limiting

- **Search endpoints:** 100 requests/minute
- **Indexing endpoints:** 50 requests/minute
- **Autocomplete:** 200 requests/minute

Interactive Documentation

- **Swagger UI:** http://localhost:8011/docs
- **ReDoc:** http://localhost:8011/redoc