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* Name of the pathway in which you are enrolled: Bécalos Techno Ready
* Title of the Challenge: **Challenge 3 – Server and Database Commands**

**Technical Report: Google Scholar API (via SerpApi)**

**1. Endpoints**

The Google Scholar API is accessed through **SerpApi** endpoints. The base endpoint is:

<https://serpapi.com/search>

To specify Google Scholar as the data source, the engine parameter must be set to "google\_scholar".

Examples of specific endpoints:

* **Scholar Articles Search**
* https://serpapi.com/search?engine=google\_scholar&q=machine+learning
* **Scholar Author Profile**
* https://serpapi.com/search?engine=google\_scholar\_author&author\_id=XXXX
* **Scholar Citations**
* https://serpapi.com/search?engine=google\_scholar\_cite&q=XXXX

**2. Authentication Methods**

To access the API, you need an **API key** provided by SerpApi:

* Sign up at https://serpapi.com.
* Find your **API key** in the account dashboard.
* Include the key as a query parameter in each request:

https://serpapi.com/search?engine=google\_scholar&q=nanomaterials&api\_key=YOUR\_API\_KEY

**3. Query Parameters**

Some of the most important query parameters are:

* **q**: The search query (e.g., q=artificial+intelligence).
* **engine**: Must be set to "google\_scholar", "google\_scholar\_author", or "google\_scholar\_cite".
* **hl**: Language of the results (e.g., hl=en).
* **num**: Number of results per page (default 10, max 20).
* **start**: Pagination offset (e.g., start=10 for results 11–20).
* **author\_id**: Required for author profile lookups.
* **api\_key**: Your authentication key.

Example:

https://serpapi.com/search?engine=google\_scholar&q=quantum+computing&num=20&hl=en&api\_key=YOUR\_API\_KEY

**4. Response Formats**

Responses are returned in **JSON** format. A typical result includes structured fields such as:

Texto

El contenido generado por IA puede ser incorrecto.

**5. Usage Limits**

* **Free Plan**: Limited to **100 searches per month**. (I’ll use this one)
* **Paid Plans**: From **$50/month** (5,000 searches) and upwards.
* **Rate Limits**: Typically 1 request per second per API key to avoid throttling.

**6. Code Examples**

**Python**

Texto

El contenido generado por IA puede ser incorrecto.

**JavaScript (Node.js)**

Texto

El contenido generado por IA puede ser incorrecto.

**cURL**

curl "https://serpapi.com/search?engine=google\_scholar&q=artificial+intelligence&api\_key=YOUR\_API\_KEY"