**Global Compass**

Tools & Technology Stack Required

1. Machine Learning & Data Science

* **Programming Language:** **Python** is the undisputed leader for ML projects due to its vast ecosystem.
* **Core ML Libraries:**
  + pandas, numpy: For data manipulation and analysis.
  + scikit-learn: The workhorse for traditional ML models (classification, regression, clustering). Perfect for initial content-based filtering.
  + nltk, spaCy: For Natural Language Processing (NLP) - crucial for the tourist and professional phases.
  + gensim: For topic modeling (LDA) and word embeddings (Word2Vec).
  + TensorFlow or PyTorch: If you decide to build more complex deep learning models (e.g., using BERT for better text understanding).
* **Environment:** **Jupyter Notebooks** for experimentation and **VS Code / PyCharm** for development.

2. Data Collection & Storage

* **Web Scraping:** Selenium (for JavaScript-heavy sites).
* **APIs:** requests library to connect to various travel and job APIs.
* **Database:**
  + **Development/Small Scale:PostgreSQL**. SQL is essential for managing structured data (user profiles, university details).
  + **Production/Large Scale:** A combination of **PostgreSQL** for structured data and a **NoSQL** database like **MongoDB** for storing unstructured data like user reviews or scraped blog text.

3. Deployment & Production

* **Backend Framework:** Flask to create the application's logic and APIs.
* **Frontend (Basic Demo):** HTML, CSS, JavaScript,react.js with vite framework**.**
* **Version Control:** **Git** with **GitHub** or **GitLab**.