

## Case Study: Cornell University: AI Nutrition Survey



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### Client Overview

We conceptualized and prototyped an AI-powered dashboard and chatbot interface to manage and present nutritional survey data from 11 countries in various languages and formats. These reports come primarily as PDFs, each with different tabular layouts and units.

### The Challenge

Currently, researchers manually extract data, convert it into SI units, and attempt to compare it across reports. This is inefficient, error-prone, and difficult to scale, especially when data is in multiple languages and non-standard formats.

### Our Solution

- Use OpenAI to extract tabular data from multilingual PDFs
- Normalize the data into a unified schema with SI units
- Create a researcher-facing dashboard to explore and visualize standardized nutrition data
- Build an AI chatbot interface that enables researchers to ask questions in natural language about the data

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### Results

- Custom reports delivered, fully automated
- 100% reduction in manual report generation tasks for staff
- Real-time data from the field to the dashboard
- Enhanced user trust and retention through consistent, personalized insights

### Key Features

- PDF table parsing engine with multilingual parsing
- Unit harmonization engine to convert values into SI standards
- Searchable data dashboard with filters and export features
- AI chatbot (text-based initially) for direct access to insights from structured data

### Target Audience

- Academic researchers (initial use case)
- Potential future expansion to university students, NGOs, and international agencies

### Tech Stack

- Python (PDF extraction + data processing)
- OpenAI API for NLP and chatbot functionality
- Laravel frontend with charting and table components
- Planned voice interface for future expansion

### Why it matters

This case shows how Basebuild can take fragmented, multilingual datasets and unify them into actionable intelligence. By combining several AI technologies and a thoughtful user

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interface, we reduce manual labor and open the door for scalable global research collaboration.