

readAR

Transforming educational experiences for individuals with learning disabilities.

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Types of Learning Disabilities



- Dyslexia
- ADHD
- Auditory Processing Disorder
- Dyscalculia

Visual and auditory cues have been proven to enhance learning for students with learning disabilities (“Creating visual explanations improves learning”, NIH 2016).

Furthermore, visualizations for stuff like mathematical concepts and physics phenomena are crucial for students with conditions like Dyscalculia and ADHD

Problem: Word Sense Disambiguation

Our solution: Custom fine-tuned BERT model

How much **work** is done by a man pushing a box
that weight  hill that's 10 m above sea
level, if the  by the hill with the
horizontal is 30 degrees?

Above Image from Microsoft Immersive Reader

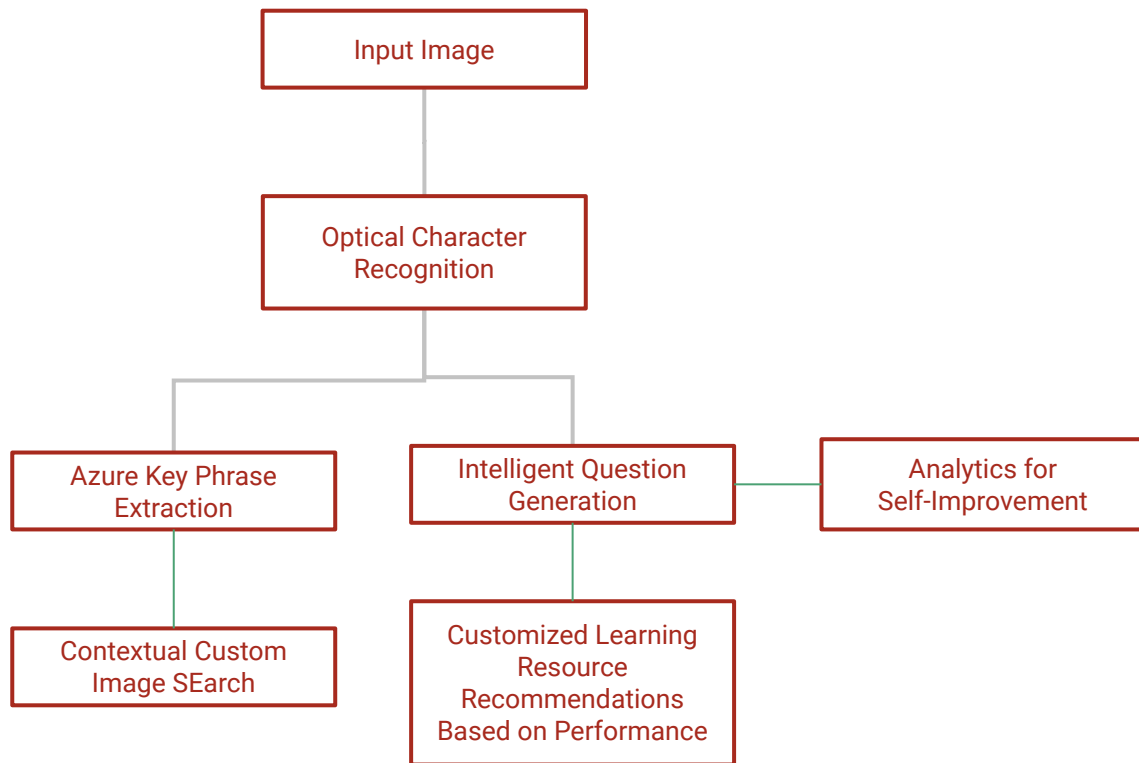
Tech Stack

Azure Cognitive Services: Vision (OCR), Key Phrase Extraction (NLU), Custom Bing Image Search, Blob Storage

Oracle: hosting all our custom APIs

Custom BERT fine-tuned model for WSD: hosted on Oracle Cloud

Custom built intelligent quiz generation API: Using spacy, and Oracle for hosting



Lecture Notes - CS 131

Example 1 - searching a binary tree

Example 2 - reversing a linked list

Example 3 - the knapsack problem

**Pulling images and videos relevant to the
context of the slide**

Intelligent question bank (Quiz) generation from previous lectures

- Using spacy (NLP) library to identify key noun chunks in the sentence.

Customized resource recommendations (using Bing Custom Search)

From verified sources like

Khanacademy

Aispace (for visualizations)-> <http://aispace.org/>

PHET (interactive physics simulations)-> <https://phet.colorado.edu/en/simulations/category/physics>

Bigger Picture - Social Impact

Let's bring the world closer together with readAR.

