BHARATH:
DEVELOPER

DEVESH:
AZURE ENGINEER

HABEEB:
PROMPT ENGINEER

KANIKA:
AZURE ENGINEER

YESIRAT:
PROJECT MANAGER

SUPPORTEDGE

A I - P O W E R E D   C O A C H I N G   F O R   I N C L U S I V E   W O R K P L A C E S

Presented By: Group 5

Microsoft Innovation Challenge 2025

Understanding Supported Employment

Supported employment is designed to help individuals with disabilities and other employment barriers secure and maintain jobs by providing essential services such as job coaching, skills training, and ongoing assistance. However, job coaches, who play a critical role in this process, face several challenges, including a high administrative workload, limited resources, and the need to provide personalized support while effectively managing job matching and training.

These challenges highlight the importance of improving support systems, as millions of people struggle with job access due to disabilities. Enhancing these systems can foster greater workforce inclusion and ensure that individuals receive the necessary guidance to succeed in their careers.

Thought Process & Development Approach.

Identifying Gaps
Analyzed challenges job coaches face, including high workloads and limited resources.
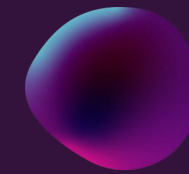
User-Centered Design:
Built an inclusive, accessible platform tailored to job coaches and job seekers with disabilities.

AI-Powered Efficiency
Integrated AI to automate tasks, enhance job matching, and provide real-time support.

Data Security & Responsible AI
Ensured compliance with ethical AI standards, prioritizing fairness, privacy, and transparency.

Personal Story

One of our teammates has been personally impacted by Irritable Bowel Syndrome (IBS), a recognized disability that significantly affects their ability to work long hours. Due to the condition, they face challenges in high-energy fields such as consulting and quantitative trading, where long, intense workdays are the norm.

Remote work has become essential for maintaining productivity and accessibility, allowing them to manage their condition while remaining professionally engaged. To seek support, they joined organizations like LimeConnect, which advocate for professionals with disabilities. Their experience reflects the struggles many individuals face in securing and sustaining employment, highlighting the need for better support systems.

Our solution aims to bridge this gap by empowering both job seekers and coaches with AI-driven tools that enhance accessibility, efficiency, and inclusivity in the workforce.

Our Solution

SUPPORTEDGE

SupportEdge is an AI-powered assistant designed to streamline job coaching for individuals with disabilities. It automates administrative tasks, enhances job matching, and provides personalized training support, allowing job coaches to focus on direct mentorship.

HOW IT HELPS:

- **AI-Powered Job Matching:** analyzes candidates' skills and preferences to recommend suitable jobs.

- **Chat-Based Guidance:** Offers instant AI-driven support for job seekers and coaches, improving accessibility and efficiency.

- Motivation and immediate gudiance: Answering basic questions that allow coaches on non-mundane tasks.

- **Automates Paperwork**: Reduces time spent on documentation, progress tracking, and reporting.
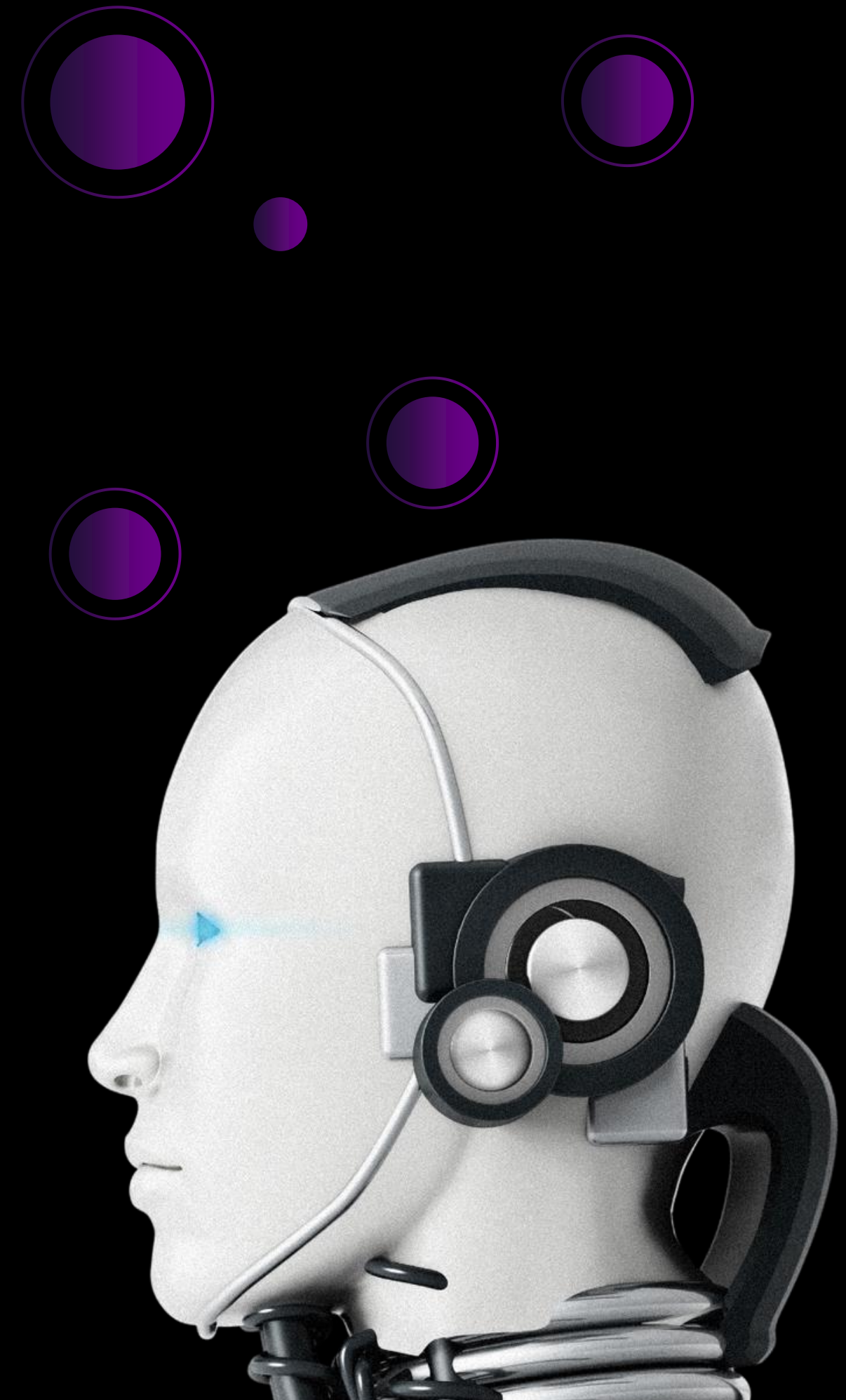
Key features

01

AI-POWERED CHATBOT

Provides instant answers and support for job coaches and job seekers.

02

SMART JOB MATCHING:

Uses AI to recommend the best job opportunities based on skills and preferences.

03

AUTOMATED REPORTING

Streamlines documentation and tracking with Azure-powered efficiency.

04

REMOTE-FRIENDLY SUPPORT:

Ensures accessibility from any location for seamless coaching and assistance.
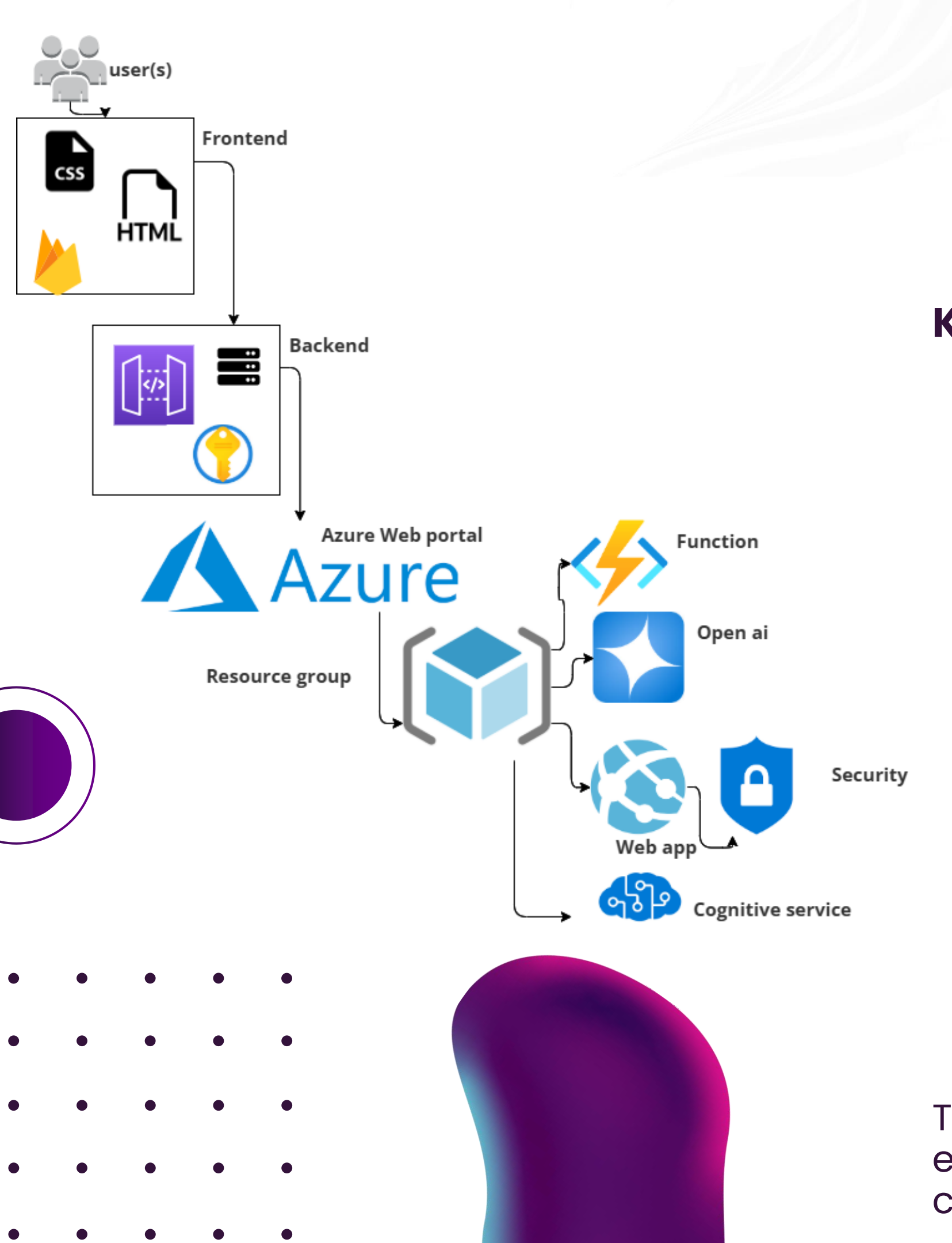
05

RESPONSIBLE AI COMPLIANCE:

Adheres to ethical AI standards for fairness, transparency, and inclusivity.
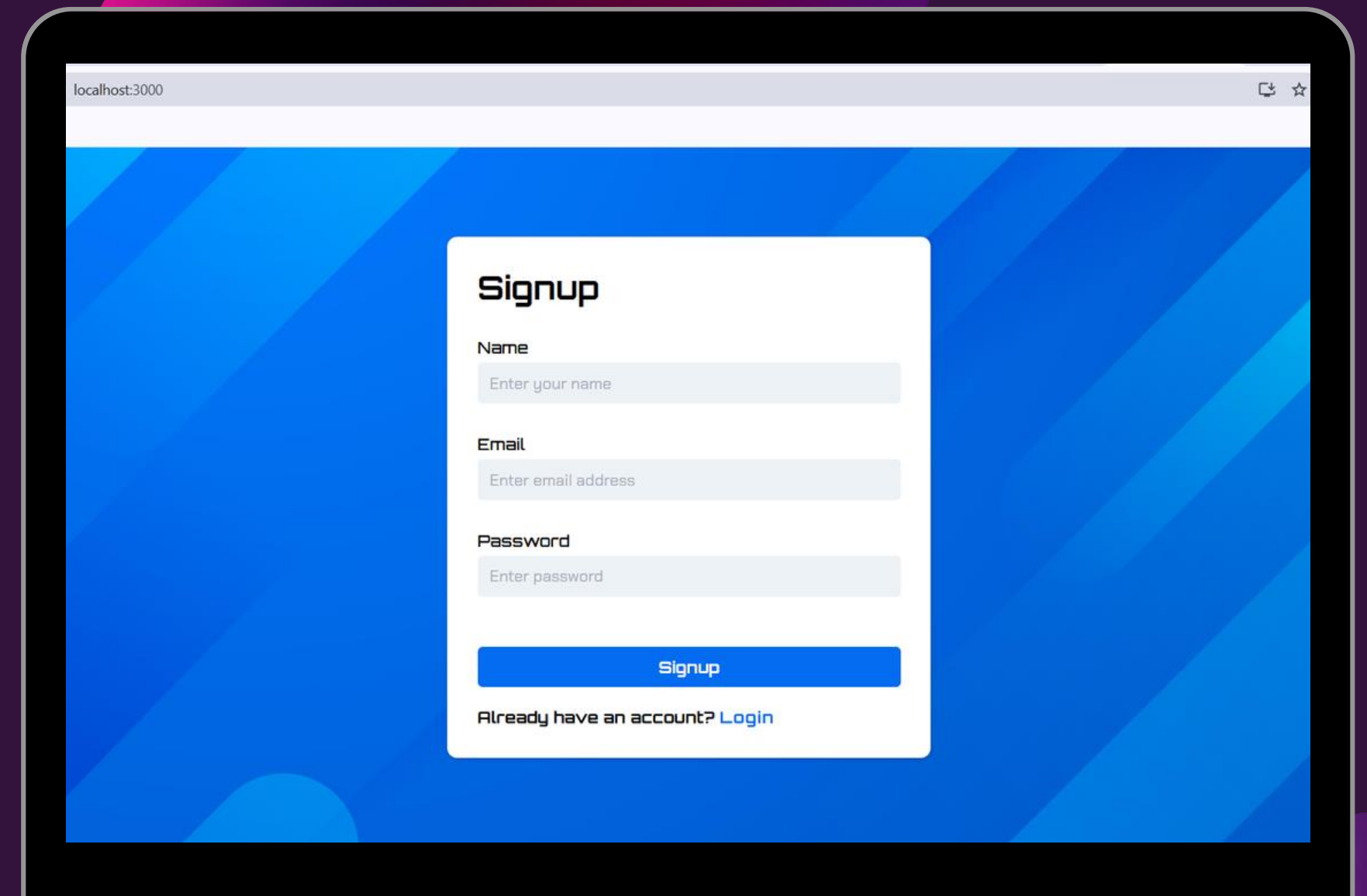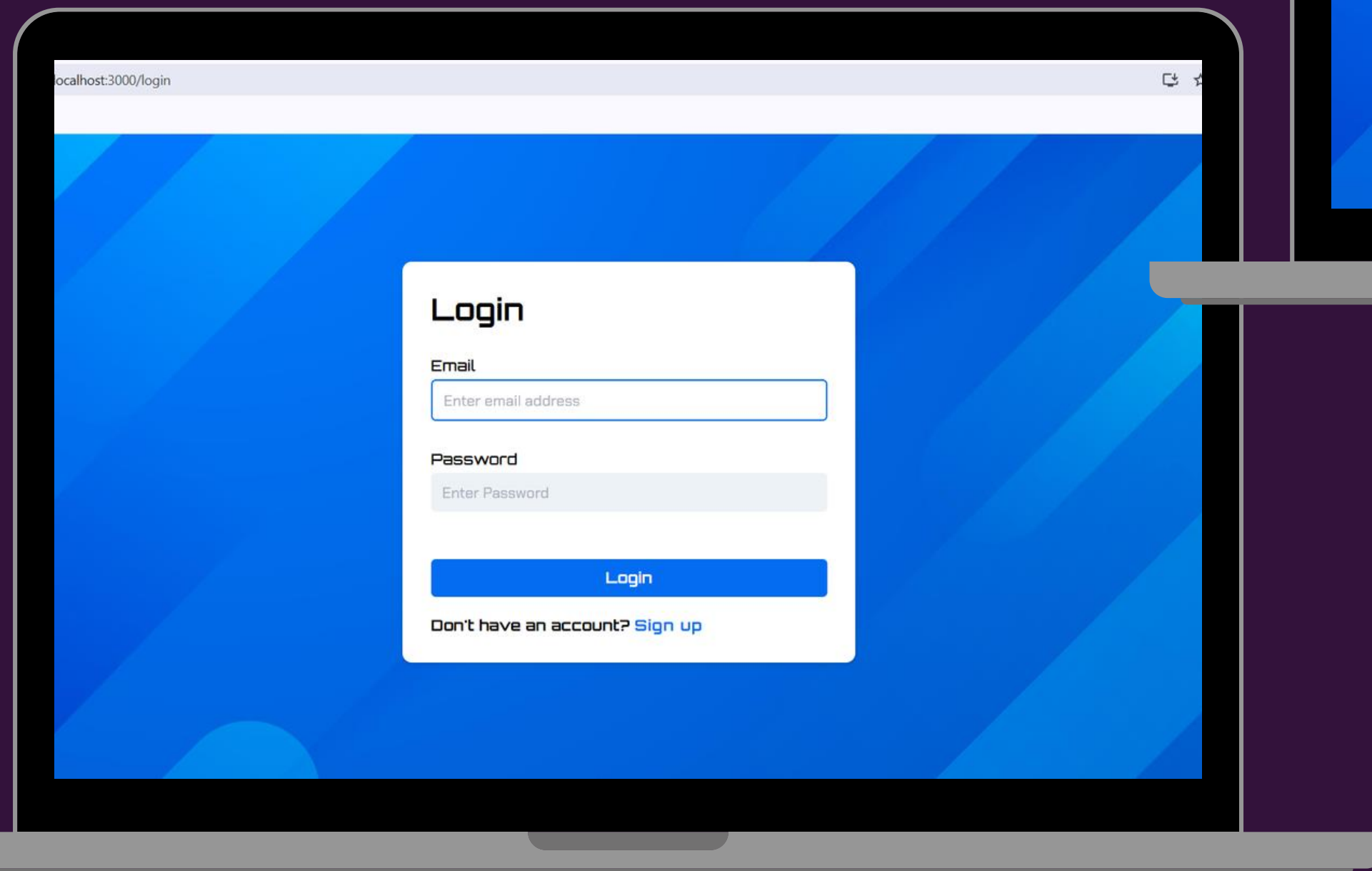
System Architecture & Tech Stack

KEY COMPONENTS:

- **Frontend (User Interface):** React.js web application for job coaches and job seekers.

- **Backend (Business Logic & API Layer):** Node.js with Express, handling requests and integrating AI services.

- **AI Layer (Intelligent Automation):** Azure OpenAI and Cognitive Services for chat support, job matching, and insights.

- **Database (Data Storage & Management):** Azure SQL for secure storage of user profiles, job data, and session history.

- **Cloud & Hosting:** Azure Functions for serverless execution, Azure Storage for file management, and API Management for secure communication.

This architecture ensures high availability, scalability, and efficiency, leveraging Microsoft's Azure ecosystem to optimize job coaching and supported employment

Demo

Authentification

Welcome page with Dyslexic font type to improve readability

Examples of AI-driven job matching & chat interactions

Hey, bharath   Sign Out

🤖 AI Job Coach Assistant

Yes, I am bharath kumar, I have Irritable Bowel Syndrome disability, I cannot do lot of strenuous work and have difficulty focusing for long hours at work with focused concentration, remote work is more suitable for me, with my situation, could you recommend jobs for me ?

Hi Bharath Kumar! Thank you for sharing that essential information about yourself. It's great that you're looking for options that align with your needs and situation. 😊 Let me help you explore roles that offer a good balance and accommodate your requirements, such as remote work, manageable tasks, and less strenuous activities.

Here are some job recommendations tailored to your situation:

---

1. Content Writing, Editing, or Copywriting
   - **Why it suits you:** These roles are typically remote-friendly, allow for flexibility, and often involve working independently. You can pace yourself without physical strain.
      - **Skills needed:** Strong written communication, attention to detail, and creativity.
      - **Examples:** Blog writing, technical writing, proofreading, SEO content creation.

Type here...   ➤
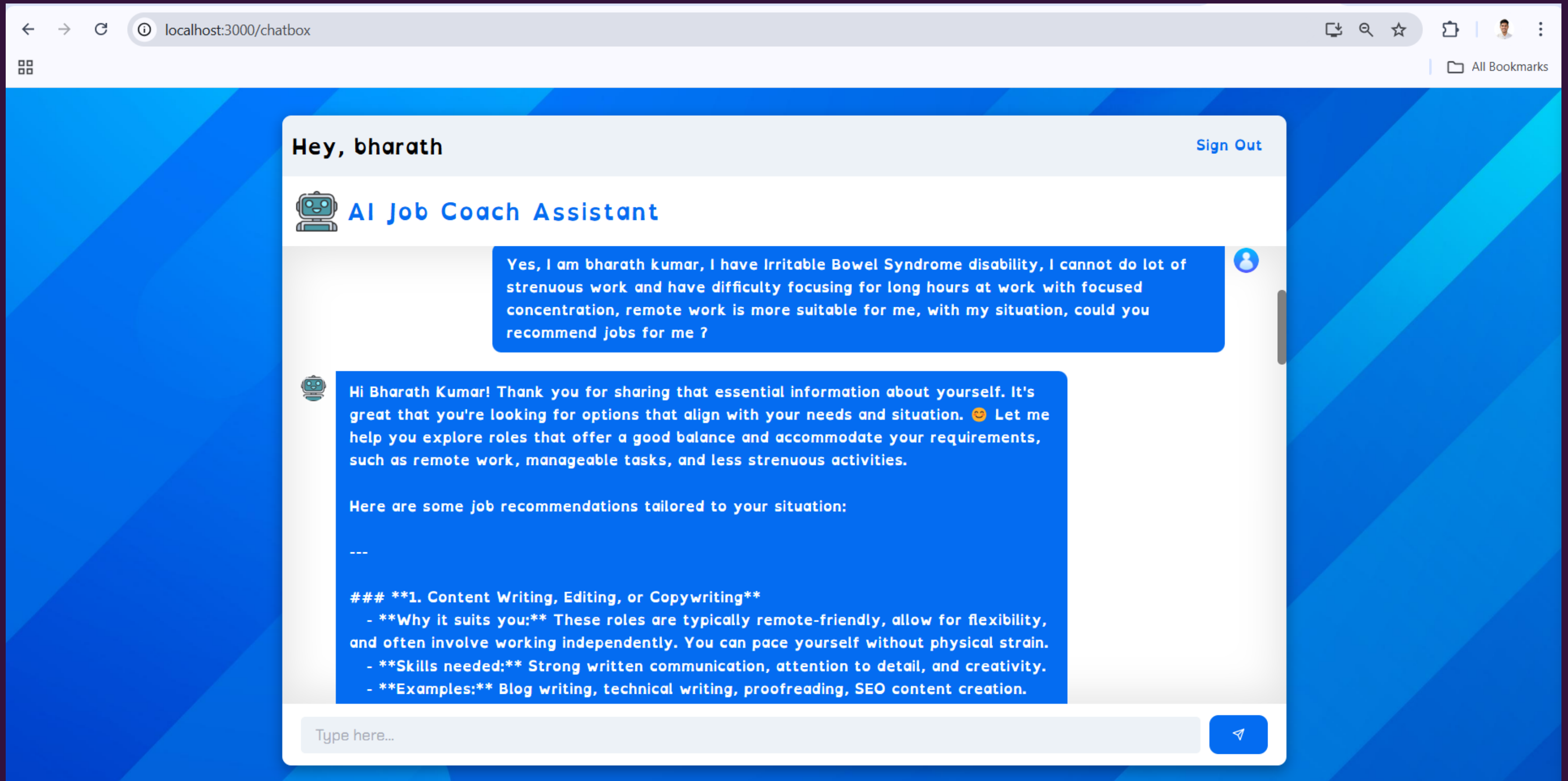
User Interface showcasing accessibility features, find a lint to video demo

Hey, bharath

🤖 AI Job Coach Assistant

> Yes, I am bharath kumar, I have Irritable Bowel Syndrome disability, I cannot do lot of strenuous work and have difficulty focusing for long hours at work with focused concentration, remote work is more suitable for me, with my situation, could you recommend jobs for me ?

Hi Bharath Kumar! Thank you for sharing that essential information about yourself. It's great that you're looking for options that align with your needs and situation. 😊 Let me help you explore roles that offer a good balance and accommodate your requirements, such as remote work, manageable tasks, and less strenuous activities.

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Type here...

Training the model

Chat history   Response format [Text ⌄]

New chat session started
—— The assistant setup has been updated. Previous messages won't be used as context for new queries. ——

> Who are you?

···

I am an AI assistant designed to help you identify suitable job opportunities and accommodations based on your disabilities, skills, work experience, preferred working conditions, and support needs. By analyzing the information you provide, I generate tailored job recommendations that match your unique preferences and circumstances. Let me know how I can assist you!

New chat session started
—— The assistant setup has been updated. Previous messages won't be used as context for new queries. ——

Type user query here. (Shift + Enter for new line)

0/128000 tokens to be sent

truction for the Assistant:

"Assist [Name] in identifying suitable job roles based on their skill set, disability accommodations, and preferred working conditions, then create tailored recommendations for job search and workplace success. Use the provided raw data to analyze their needs, strengths, and preferences, while addressing any support services like job coaching, transportation, and accommodations."

Example Raw Data for Processing:

```
{
 "User": {
 "Name": "Alex",
 "Skills": ["Power Systems", "Circuit Design", "Project Management"],
 "Disability": ["Dyslexia"],
 "SupportNeeds": ["Job Coaching"],
 "PreferredJobType": "Full-time",
 "PreferredWorkingConditions": ["Flexible Schedule", "Remote"],
 "TransportationNeeds": ["Accessible Public Transport"]
 },
 "JobsAvailable": [
 {
 "Title": "Electrical Engineer",
 "SkillsRequired": ["Power Systems", "Circuit Design"],
 "WorkType": "Full-time",
 "WorkingCondition": ["Flexible Schedule", "In-Office"],
 "Location": "Downtown Office"
 },
 {
 "Title": "Project Manager",
 "SkillsRequired": ["Project Management", "Communication"],
 "WorkType": "Full-time",
 "WorkingCondition": ["Remote"],
 "Location": "Remote"
 },
 {
 "Title": "Technical Writer",
 "SkillsRequired": ["Technical Documentation", "Editing"],
 "WorkType": "Part-time",
 "WorkingCondition": ["Flexible Schedule", "Remote"],
 "Location": "Remote"
 }
 ]
}
```

How the Machine Learning Model Could Process This:

Input Analysis:
User's profile: Analyze Alex's disability (Dyslexia), preferred conditions (Full-time, flexible schedule, remote), and required support (Job Coaching, accessible public transport).
Skills: Match Alex's skills against available job roles.
Filtering Jobs:
From the "JobsAvailable" dataset, filter roles based on the intersection of:
Skills match (e.g., Alex has Power Systems and Project Management for relevant jobs).
Work type (Alex prefers full-time roles).
Flexible conditions for Dyslexia accommodations (e.g., consider jobs that are remote or flexible).
Potential challenges (onsite roles may not meet Alex's transportation needs).
Scoring Jobs:
Assign a relevance "score" based on how well the job aligns with Alex's:
Skills.
Disability accommodations.
Support and transportation needs.
Example:
"Project Manager" matches many criteria (full-time, remote) – higher score.
"Electrical Engineer" aligns with skills but isn't remote or easily accessible – lower score.
Output Recommendations:
Ranked job suggestions with explanations:
Recommendation 1: Project Manager – Matches all skills and conditions.
Recommendation 2: Electrical Engineer – Matches skills but might require transportation adjustments.
Recommendation 3: Technical Writer – Doesn't fully match skills but allows flexibility.

Example Output for the Assistant:

"Based on Alex's profile and preferences, the following roles are recommended:

Project Manager:
Skills Matched: [Project Management]
Conditions Met: Full-time, remote, flexible schedule.
Suggested Next Step: Tailor resume to highlight Project Management and apply for this role.
Electrical Engineer:
Skills Matched: [Power Systems, Circuit Design].
Conditions Partly Met: Full-time, flexible schedule, but transportation needs may require accommodation.
Suggested Next Step: Explore transportation support options and seek workplace accessibility.
Technical Writer:
Skills Misaligned, but provides flexibility for Dyslexia.
Suggested Next Step: Develop applicable skills (e.g., Technical Documentation) or use as backup option."

Compliance

Principle	Checklist Item	How to Test	Result (✓/✗)	Notes/Actions
Fairness	Ensure no bias in responses.		✗	There had to be bias because of the specific use case
Reliability	Handle unexpected inputs gracefully.	Stress test with edge cases, invalid inputs, and malicious queries.		
	Avoid harmful content.	Implement Azure Content Moderator to flag or filter harmful content.	✓	As depicted above
Privacy	Minimize and anonymize personal data collection.	Review data collection methods and ensure compliance with privacy regulations.		
	Encrypt all user data in transit and at rest.	Test encryption standards using tools like Azure Security Center.	✓	
Inclusiveness	Provide accessible UI.	Test against WCAG 2.1 guidelines.	✓	
Transparency	Clearly disclose the bot's purpose and data use.	Verify introductory messages and terms of use are clear and concise.		As depicted in the response video
	Explain how responses are generated.	Ensure user-friendly documentation is available for AI behavior.	✓	
Accountability	Provide a feedback/report mechanism.	Test feedback channels and ensure reports are addressed promptly.		Write something…
	Log errors and maintain detailed monitoring.	Use Azure Application Insights for real-time monitoring and error logging.	✗	We did not have the time to check

```
BadRequestError: 400 The response was filtered due to the prompt triggering Azure OpenAI's content management policy. Please modify your prompt and
    at APIError.generate (file:///C:/Users/Bharath%20Kumar/Documents/MicrosoftHackathon/JobCoach/backend/node_modules/openai/error.mjs:41:20)
    at AzureOpenAI.makeStatusError (file:///C:/Users/Bharath%20Kumar/Documents/MicrosoftHackathon/JobCoach/backend/node_modules/openai/core.mjs:293
    at AzureOpenAI.makeRequest (file:///C:/Users/Bharath%20Kumar/Documents/MicrosoftHackathon/JobCoach/backend/node_modules/openai/core.mjs:337:30)
    at process.processTicksAndRejections (node:internal/process/task_queues:95:5)
    at async file:///C:/Users/Bharath%20Kumar/Documents/MicrosoftHackathon/JobCoach/backend/index.js:56:22 {
  status: 400,
  headers: {
    'apim-request-id': '55f23c59-e02a-4b13-9834-21d9f70b9c2d',
    'azureml-model-session': 'v20250319-1-164616836',
    'content-length': '353',
    'content-type': 'application/json',
    date: 'Fri, 21 Mar 2025 18:13:38 GMT',
    'ms-azureml-model-error-reason': 'model_error',
    'ms-azureml-model-error-statuscode': '400',
    'ms-azureml-model-time': '1018',
    'strict-transport-security': 'max-age=31536000; includeSubDomains; preload',
    'x-content-type-options': 'nosniff',
    'x-envoy-upstream-service-time': '1021',
    'x-ms-client-request-id': '55f23c59-e02a-4b13-9834-21d9f70b9c2d',
    'x-ms-rai-invoked': 'true',
    'x-ms-region': 'East US',
    'x-ratelimit-limit-requests': '30',
    'x-ratelimit-limit-tokens': '30000',
    'x-ratelimit-remaining-requests': '29',
    'x-ratelimit-remaining-tokens': '28055',
    'x-request-id': '5f439a60-095f-419a-8539-357ed9ceb221'
  },
  request_id: '5f439a60-095f-419a-8539-357ed9ceb221',
  error: {
    message: "The response was filtered due to the prompt triggering Azure OpenAI's content management policy. Please modify your prompt and retry.
    type: null,
    param: 'prompt',
    code: 'content_filter',
    status: 400
  },
  code: 'content_filter',
  param: 'prompt',
  type: null
}
```

```
  },
  request_id: '5f439a60-095f-419a-8539-357ed9ceb221',
  error: {
    message: "The response was filtered due to the prompt triggering Azure OpenAI's content management policy. Please modify your prompt and retry.
    type: null,
    param: 'prompt',
```

Future Scope & Impact

Potential Expansion

- Advanced AI coaching and personalized training modules.
- Enhanced accessibility features like voice input and multilingual support
- Collaborations with employment services and organizations like LimeConnect, etc.
- Fix minor bugs, such as return text in the chat bot.
- Further train the model to ensure proper validation.
- Support multiple languages and regional variations.

Long-Term Goal:

Boost employment opportunities for people with disabilities.
Scale supported employment with AI-driven efficiency and inclusivity.

Challenges & Key Learnings

- Setting up Azure resources and integrating AI models efficiently.
- Ensuring accessibility features align with real user needs.
- Training AI to provide fair, bias-free job recommendations
- Varying time zones within the group.
- Varying engagement level within the group

Team-wise

As a team of individuals with diverse backgrounds, locations, and commitments, it was challenging to align on certain decisions and work cohesively within the short timeframe. There was a lot of back-and-forth communication and sacrifices required to ensure we ultimately reached our goal.

Task-Wise

Picking up a new skill and applying it immediately was new for a lot of us.

We all did not feel confident enough for some of the task that were assigned.

Key Takeaways

- A lot of the challenges posed were sometimes deterring, but, with a little push from one teammate or the other, it became a fun learning curve.
- We also made conscious efforts to ensure that we were not too distracted by the challenge. Making conscious efforts to consider the user , made the project and learning more wholesome

Team-wise

As the project drew to an end and we reminces on the experince, for some of us this was the first Hacakathon ever, and completing the project brought on a wave of immense and inexplicable emotions. Some member of the team have agreed to be teammates beyond this hacakthon

Task-wise

The true beauty of project-based learning is the resulting confidence.

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THANK YOU

FOR YOUR ATTENTION

Presented By: Yesirat Sanni | Contact us

GitHub

Appreciation notes to:

Noah Feldman

Santhiswaroop Naik

Meelinda Carrion

NB: We have also worked on this project with the help of ChatGPT to debug errors amongst other mundane tasks.