CAPSTONE PROJECT

NUTRITION AGENT

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OUTLINE

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PROBLEM STATEMENT

- People seek personalized nutrition advice, but most tools offer only generic plans.
- Many tools fail to consider allergies, preferences, lifestyle, and evolving health needs.
- Dieticians face time and resource limits to scale one-on-one counseling.
- There is a need for an AI-based assistant that understands and adapts like a real nutrition expert.

PROPOSED SOLUTION

- Build a virtual AI Nutrition Agent using Generative AI and NLP.
- It can process input via text, voice, or images (like food labels or meals).
- The system suggests customized meal plans based on goals, medical needs, and culture.
- Offers food swap and explains nutritional decisions with clear context

SYSTEM APPROACH

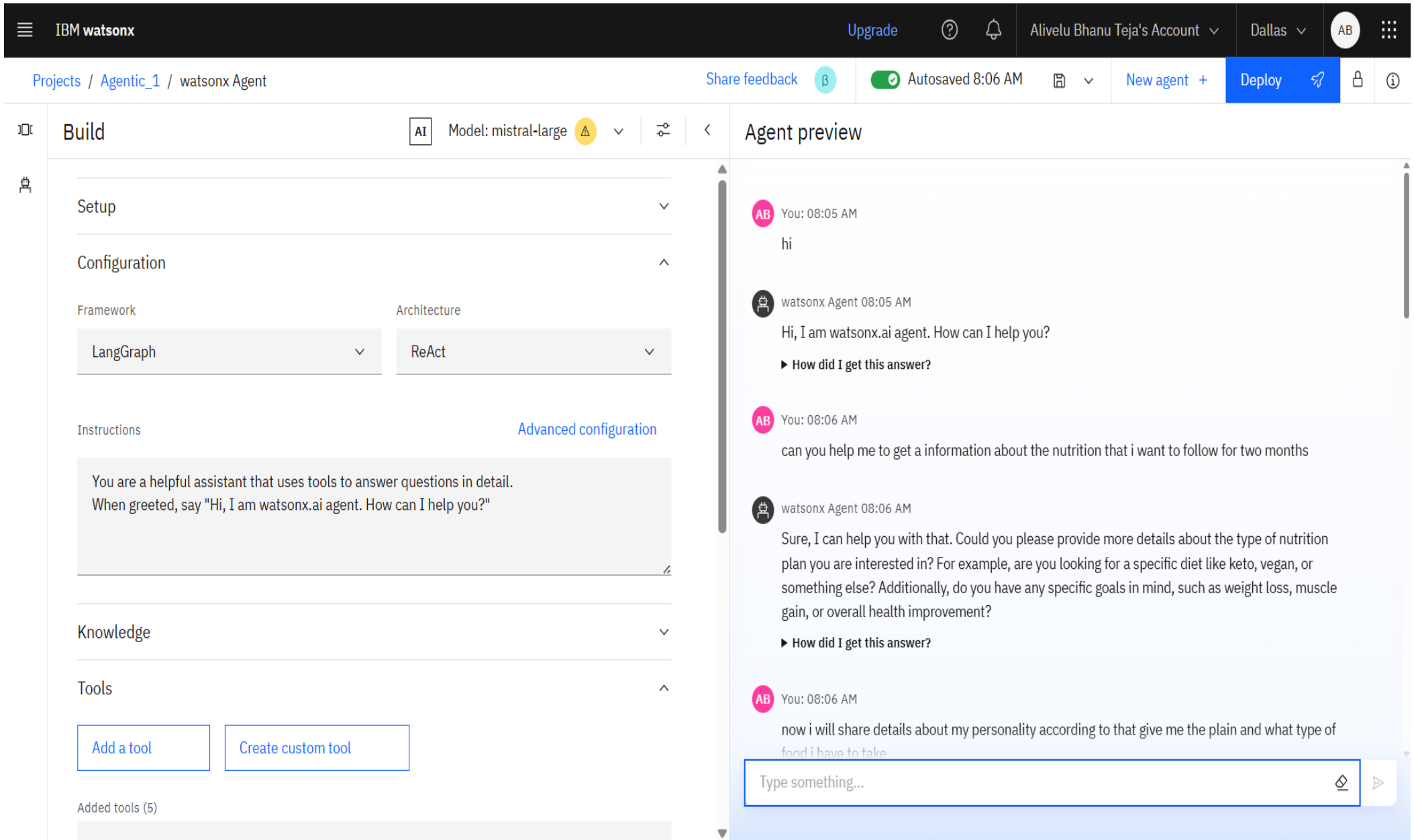
- IBM Cloud Lite for deploying the backend services.
- IBM Granite for handling natural language understanding and generation.
- Integration of multimodal AI to accept image inputs.
- Connect to dietary and health databases for personalized planning.

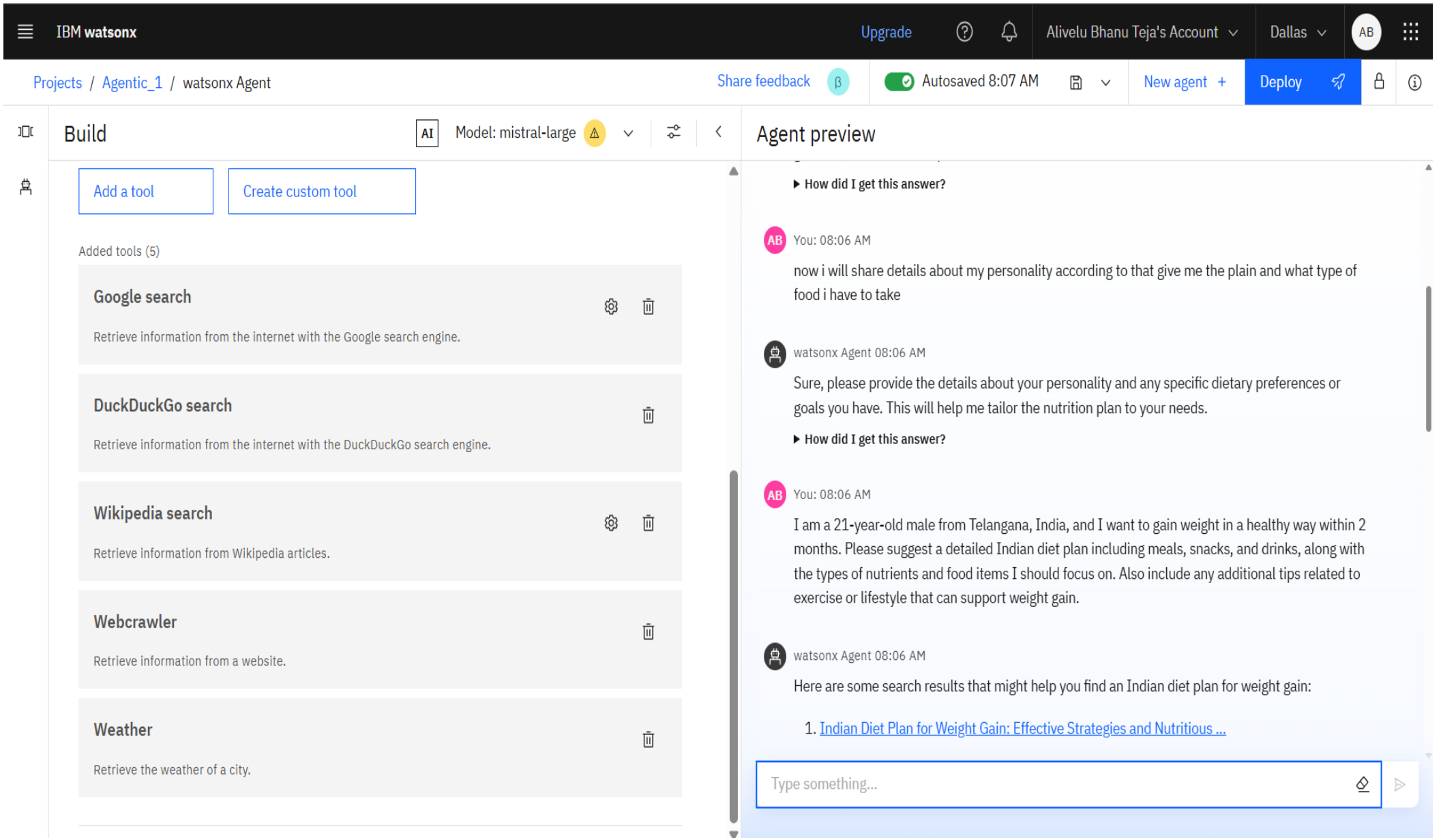
ALGORITHM & DEPLOYMENT

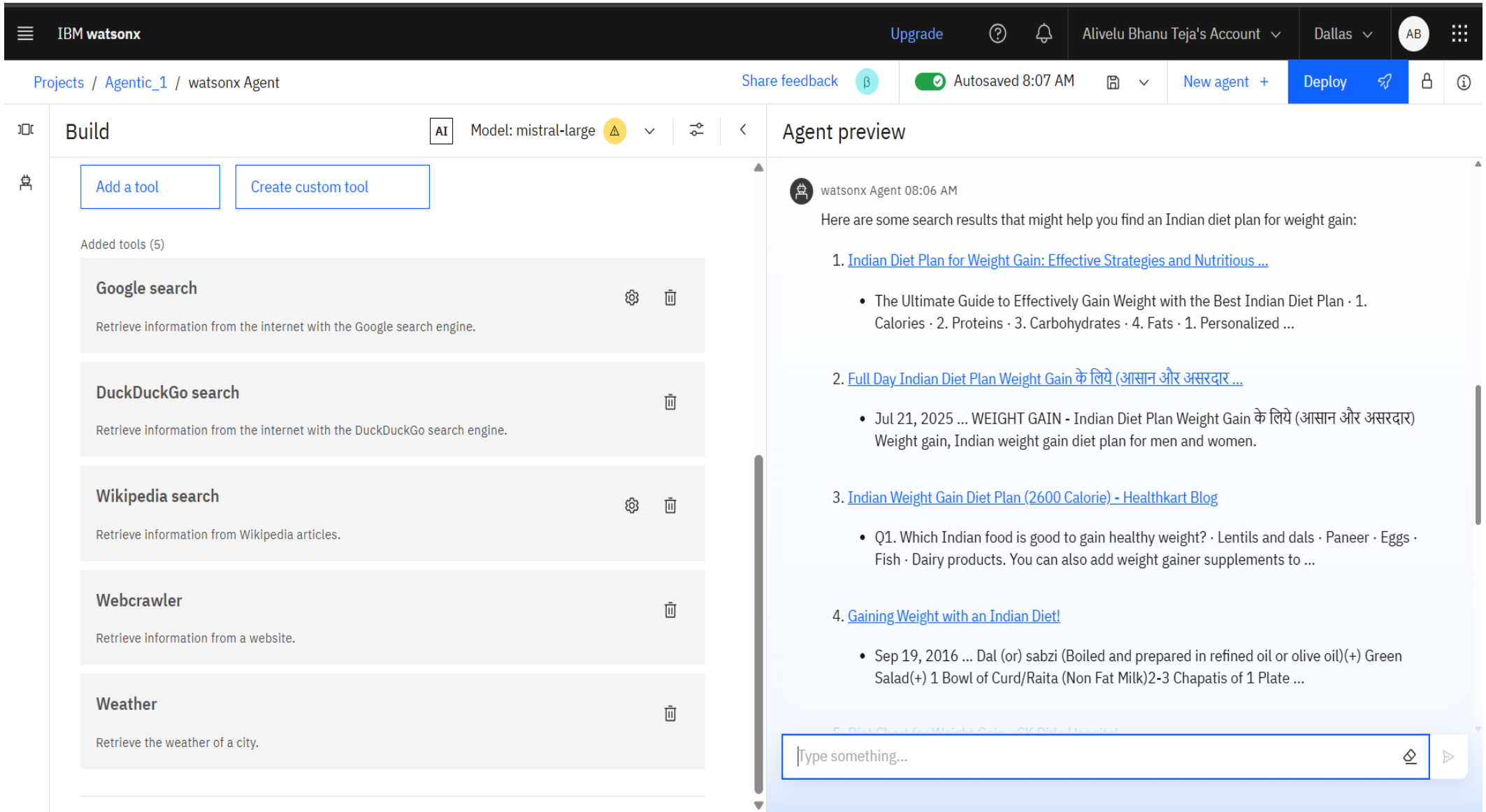
- Input: User provides health goals, allergies, fitness routine, or uploads food images.
- NLP Engine: Processes text or voice commands.
- Image Model: Identifies food items from images.
- AI Model (IBM Granite): Generates meal plan and food swaps.
- Deployment: Hosted on IBM Cloud with a web or mobile chatbot interface.

RESULT(OUTPUT IMAGE)

- Display a sample chatbot response to a query like:
  "Can you give me a weight gain diet plan for a 21-year-old from Telangana, India?"
  - Ensure the response includes detailed meal suggestions, nutrition focus, and lifestyle tips for weight gain
  - Highlight if the chatbot is using live search tools like Google or Wikipedia for accurate, real-time answers
  - Include screenshot or image of working UI (if available)







CONCLUSION

- The Nutrition Agent empowers users with tailored diet guidance.
- Reduces need for repeated dietician visits while delivering expert advice.
- Encourages healthier lifestyle with continuous and interactive support.

FUTURE SCOPE

- Add wearable health tracker integration (e.g., Fitbit).
- Expand to regional languages.
- Enable AR food scanning.
- Add community-based recipe suggestions.
- Include nutrition tracking and progress dashboard.

REFERENCES

- IBM Cloud Documentation
- IBM Granite Model Reference
- Edunet Foundation Internship Guidelines
- Research on Generative AI in Health & Nutrition
- Open Food Facts & USDA Food Databases
- NLP & Multimodal AI Papers

IBM CERTIFICATIONS

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THANK YOU

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