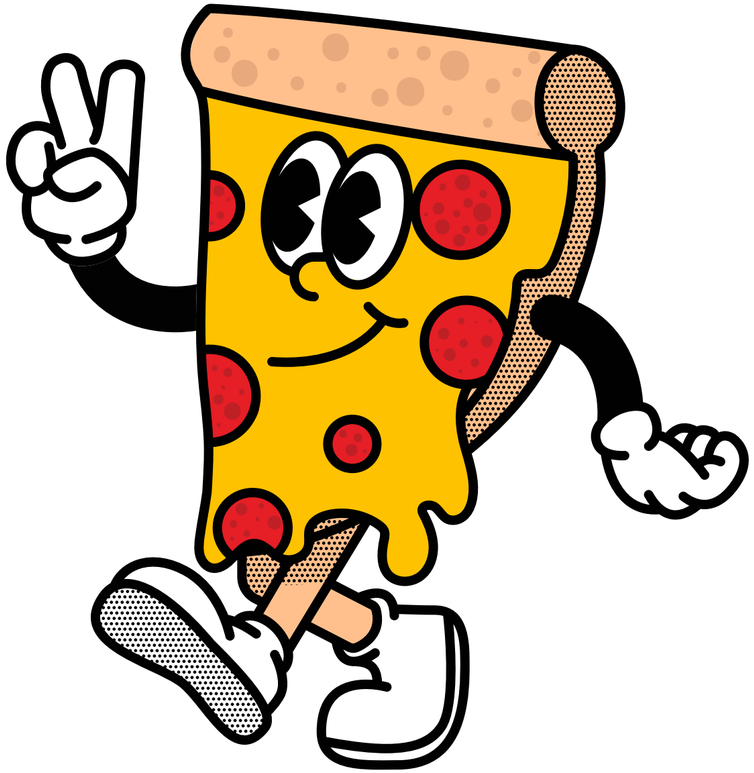
AI Pizza Ordering System



Artifical Intelligent

02 August 2025

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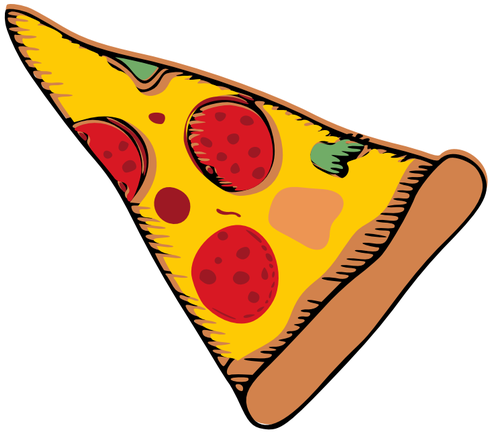
Implementation Overview

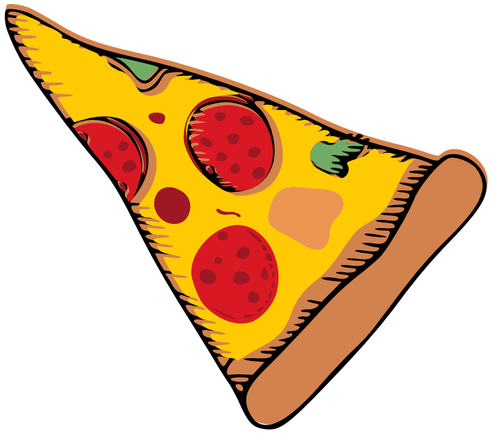
System Architecture & Design

- Conversational AI with responsive web chat interface
- State machine manages multi-step ordering: pizza, size, toppings, requests, address
- Backend: Python Flask with session-based conversation management
- Frontend: Dynamic chat UI with real-time order summary
- AI: Ollama Mistral:7b local language model
- Strict prompt engineering enforces conversation flow control



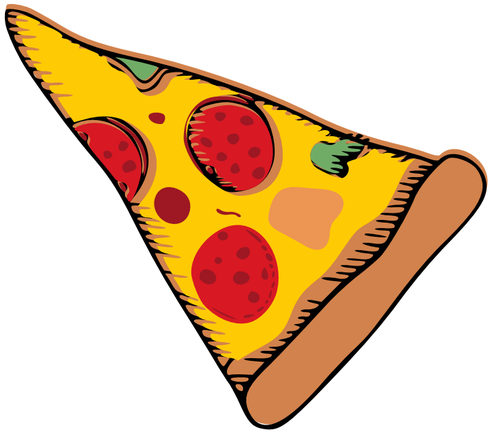
Key Features

- Context-Aware Ordering: Maintains order state across user interactions
- Input Validation: Validates pizza choice, sizes, toppings, and address
- Dual Confirmation: Automated and manual order confirmation options
- Transparent Pricing: Real-time itemized cost calculation
- Data Export: Structured JSON output for easy backend integration



Technology Stack & Prompt Engineering

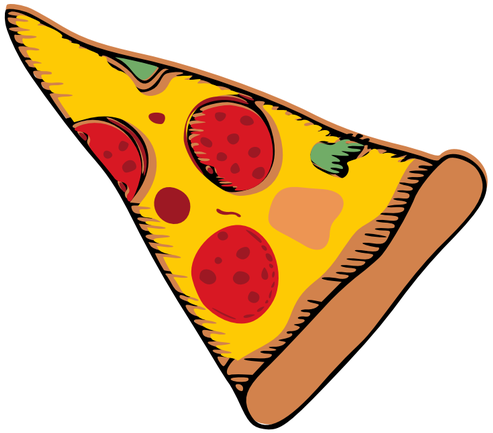
Component	Technology
Backend	Python Flask, REST APIs
AI Engine	Ollama Mistral:7b local LLM
Frontend	Vanilla JS, CSS animations
State Management	Flask server-side sessions
Deployment	Localhost (for demo/testing)



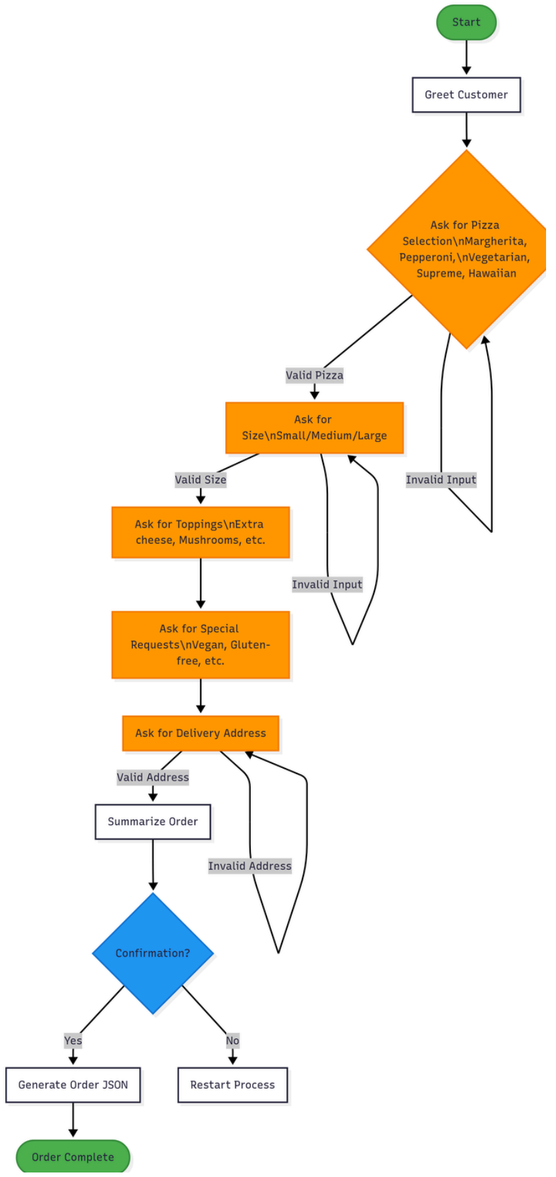
Technology Stack & Prompt Engineering

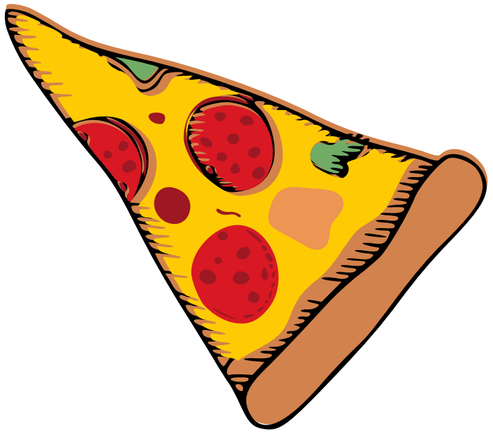
Prompt Strategy:

- 7-stage flow: Greet → Pizza → Size → Toppings → Requests → Address → Confirm
- Validation rules: no skipping, strict input checks, explicit user confirmation
- Outputs JSON only after order is confirmed



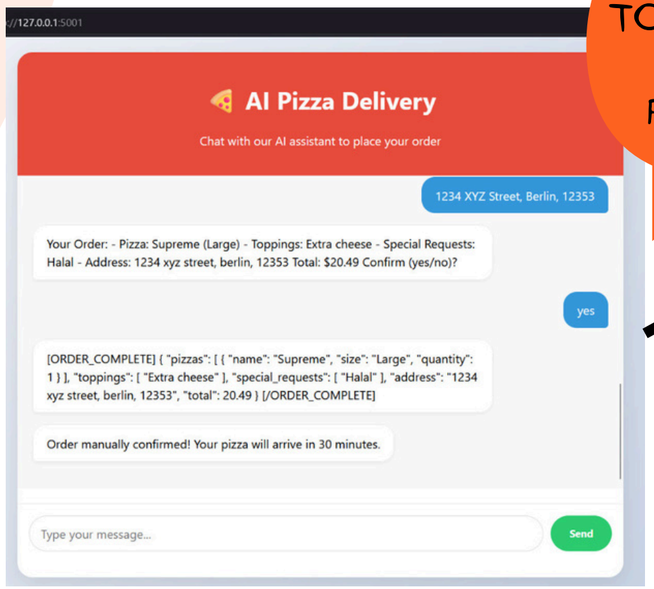
Conversation Flow



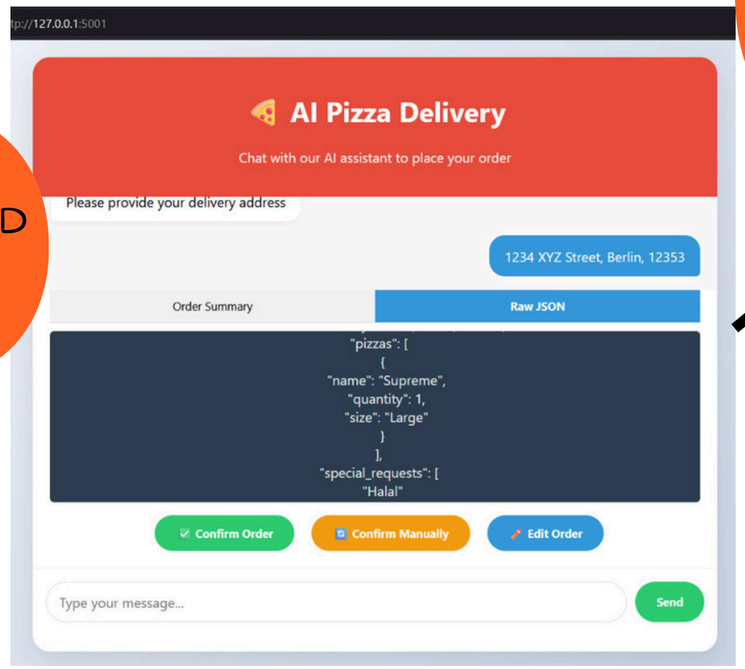


Screenshots - User Interaction

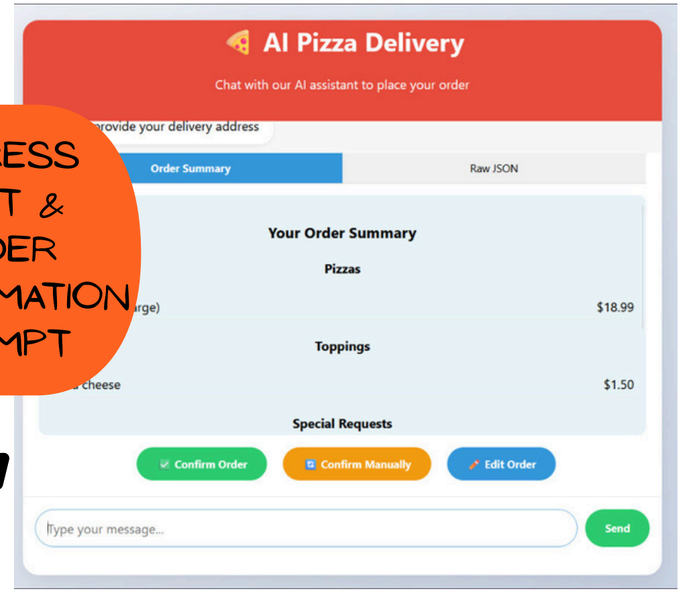
Screenshots - Order Summary & JSON Output

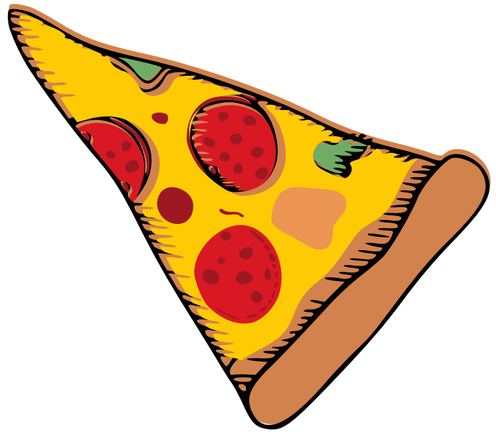


ADDING TOPPINGS AND SPECIAL REQUESTS



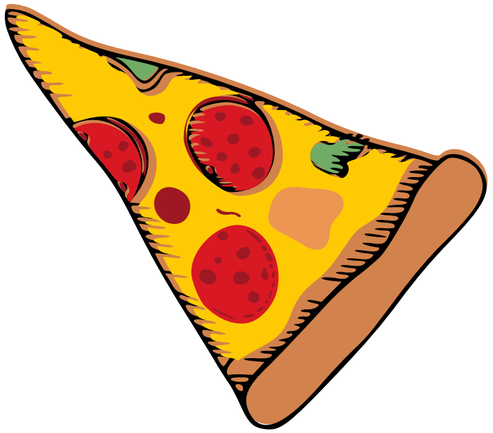
ADDRESS INPUT & ORDER CONFIRMATION PROMPT





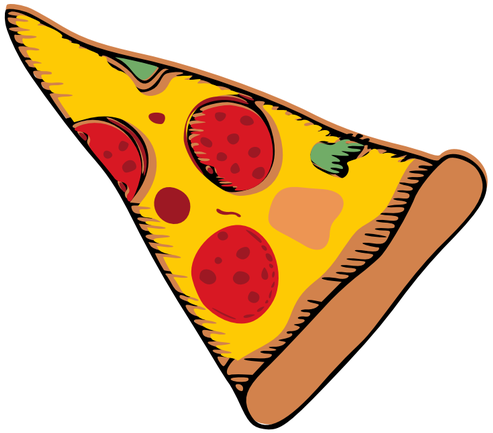
Challenges & Solutions

- Maintained conversation integrity with session state tracking
- Comprehensive input validation for all options
- Ensured data completeness before confirmation
- Automated error recovery with user-friendly prompts



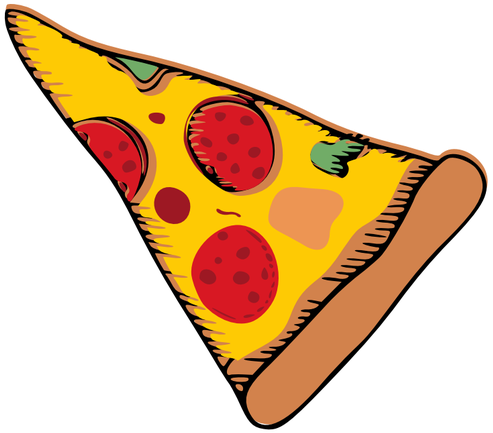
Future Enhancements

- Integrate payment gateway for seamless checkout
- Add order status tracking feature
- Support multi-language conversational AI
- Include voice interaction option
- Loyalty program integration for returning customers



Conclusion

- Demonstrated a robust, AI-driven conversational ordering system
- Balanced flexibility of natural language input with structured data validation
- Provides a blueprint for real-world AI-assisted commerce applications



Appendix & References

- Requirements: Python 3.11+, Ollama v0.1.20+
- Test Coverage: 100% core ordering scenarios
- License: MIT Open Source
- GitHub link: https://github.com/shashankjadhav-data/AI_Pizza_Delivery_App.git