



# STUDIO COMPUTE CODE ASSISTANT: GURU

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# AGENDA

**OVERVIEW**

**AI LANGUAGE  
MODELS**

**PROJECT DESIGN**

**LIVE DEMO**

**CHALLENGES**

**FUTURE OF GURU**

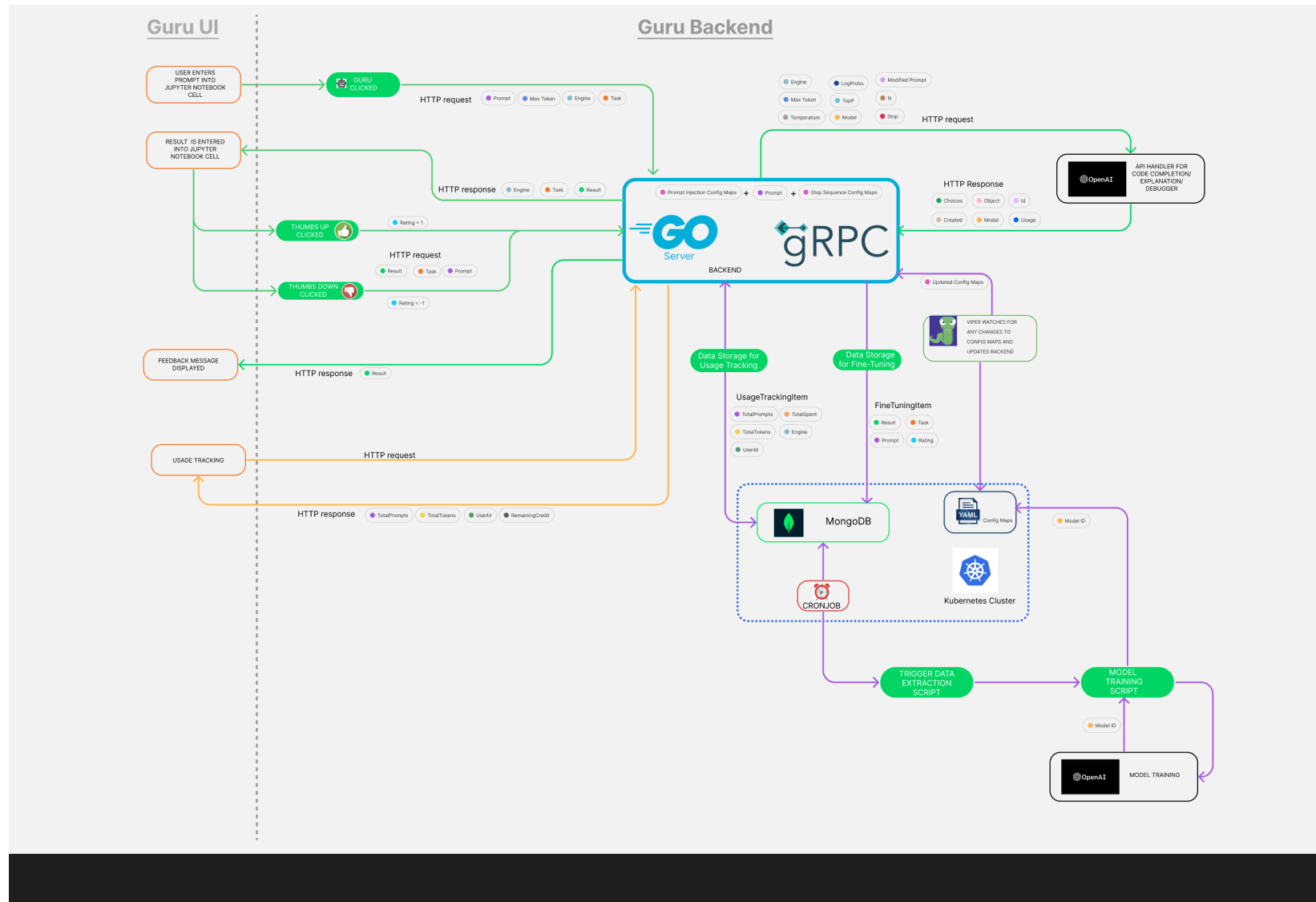
# OVERVIEW

- Objectives:
  - Create a powerful coding assistant, Compute Guru, that is seamlessly integrated into Studio Compute.
    - Guru should be able to help write code, explain code, and debug code
    - Our main integration for now is a Jupyterlab Extension
  - Build a pipeline to iteratively improve the performance of Guru over time.
    - Automate training data collection from compute users
    - Automatically update the model after some data collection threshold
  - Usage tracking.
    - Capture users' engagement with Guru
- Targeted Users:
  - Citizen developers
  - Seasoned Software Engineers

# LARGE LANGUAGE MODELS (LLM)

- Large Language models are predictive AI models
  - sophisticated auto-complete
- Open AI's Codex model is an example of a LLM
  - Codex is a public API that we leverage in Guru
  - Returns the API response as tokens (words)
  - Primary input/output are a string of tokens
    - Magic lies in engineering input tokens and parsing the output

# GURU ARCHITECTURE





LIVE DEMO



# CHALLENGES

- Large Language Model (LLM) challenges
  - Prompt engineering to illicit desirable behaviors and responses
  - Designing a fine-tuning pipeline
- Engineering challenges
  - Coordinate typescript and javascript dependencies to build our jupyter lab extension
  - Understanding API design and error handling
  - Learning Kubernetes and integrating it into our backend components



# FUTURE OF GURU

- Releasing to production
- Integrating BlackRock libraries
- Guru usage management dashboard
- Integrating with other IDEs and tools outside of Jupyterlab
- Exploring the possibility of hosting our own LLM neural network
- Coordinating privacy challenges



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THANK YOU TO THE ALADDIN STUDIO COMPUTE  
TEAM