Making your APIs AI-Ready

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Designing for a world where machines read your APIs

Shift #3 : Standardize Interactions

Standardize Interactions : Overview

- Consistency is power
- The benefits of consistency
- The downsides of inconsistent designs
- What we can do right now

Standardize Interactions

"A good architecture is not created in a vacuum."

– Roy Fielding

Standardize Interactions : Consistency is power

- Predictability is the cornerstone of autonomy
- Machines rely on patterns, not exceptions
- Consistency reduces overhead for agents

Agents recognize previous patterns

Standardize Interactions : The benefits of consistency

- Uniform patterns allow reuse of ai-agent strategies
- Reduce "surprise" to increase predictability
- Fewer design exceptions means fewer runtime errors

Consistent interactions means better results

Standardize Interactions : The downsides of inconsistency

- Inconsistent application of patterns confuses bots
- Irregular error responses increased overhead for agents
- Unexpected requirements (e.g. inputs) can lead to bugs

Inconsistency encourages bugs

Standardize Interactions : What we can do right now

- Adopt consistent error reports (RFC 9457 - Problem Details)
- Make retries possible and explicitly defined
- Use idempotent change operations (HTTP PUT)
- Avoid novel approaches (HTTP PATCH for all changes)
- Develop (and share) your company's API Style Guide

```json
{
  "type": "https://example.com/errors/invalid-input",
  "title": "Invalid input",
  "status": 400,
  "detail": "The submitted data is missing one or more required fields.",
  "instance": "/registrations/12345",
  "invalidFields": [
    {
      "name": "givenName",
      "reason": "This field is required."
    }
  ]
}
```

Agents don't appreciate creative solutions

Standardize Interactions : Summary

- Consistency is power
  - Machines rely on patterns
- The benefits of consistency
  - Reduce "surprise" to increase predictability
- The downsides of inconsistent designs
  - Inconsistency encourages bugs
- What we can do right now
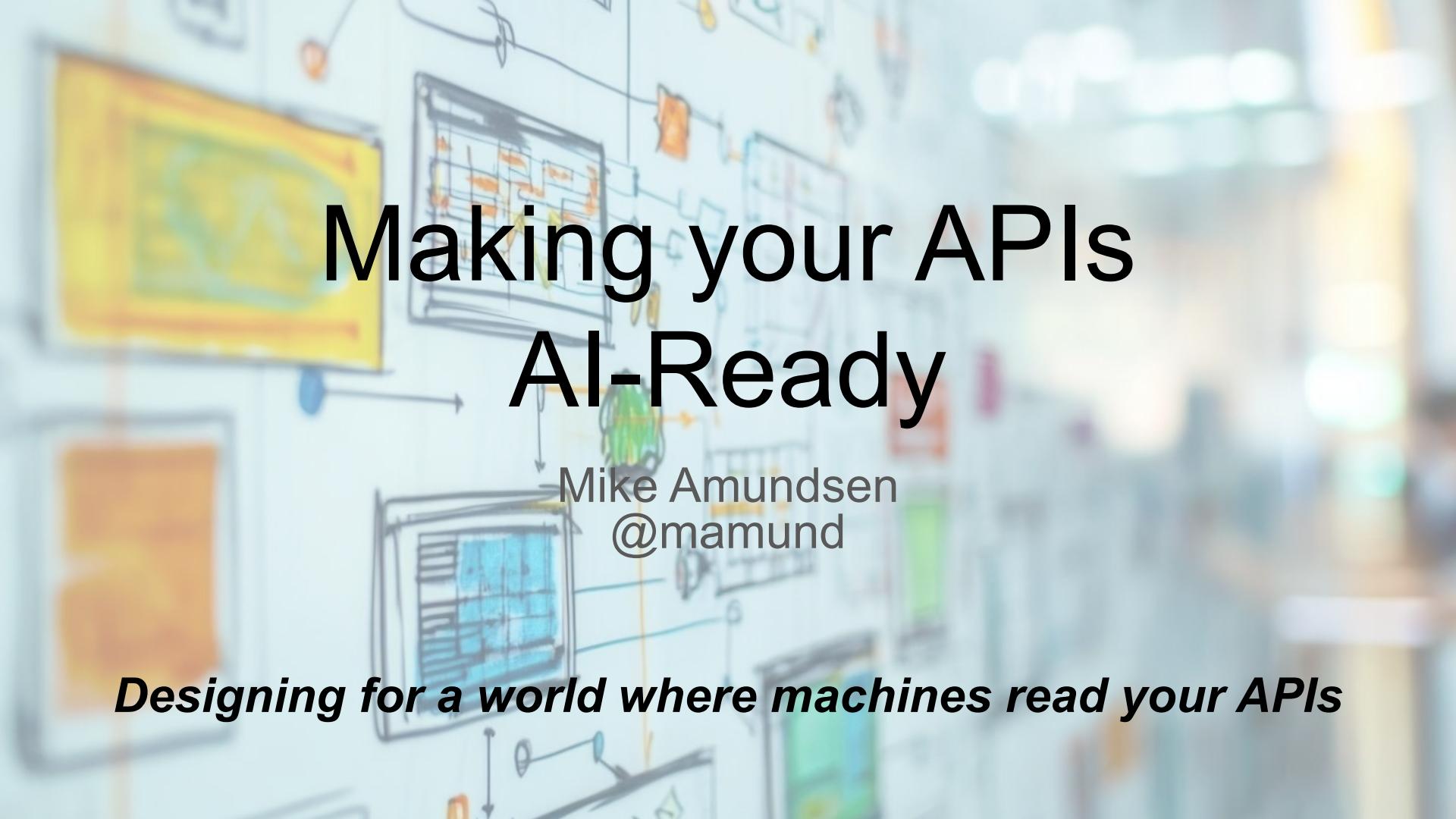 - Avoid novel approaches

Machines rely on patterns, not exceptions

Standardize Interactions : Quick Quiz

```
4.1 When it comes to APIs, consistency is _____
    A. power
    B. overrated
    C. impossible
    D. the root of most errors

4.2 One rule to keep is mind is _____
    A. never use idempotent actions
    B. use unique API patterns that bots have never seen before
    C. share your company's API style quide with your LLMs
    D. void following commmon standards when authoring APIs

4.3 For AI-bots, consistent API interactions means _____
    A. better results
    B. you have a dull API
    C. your APIs is unpredictable
    D. you'll get more runtime errors
```

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