



ANALYTICS AND DATA

TechCasts

# Pythian's AI Journey with Umass: From AI Assistant to AI Agents!

**Jon Mead**, Senior Vice President, Professional Services, Pythian  
**Ambili Thottathil**, Analytics Principal Consultant, Pythian

# Past & Future TechCasts:



February 5th

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November 2025 & January 2026 Releases

Presented by Tim Vlamis, Branden Pavol, Wayne Van Sluys, Gautam Pisharam & Taiwo Ajayi



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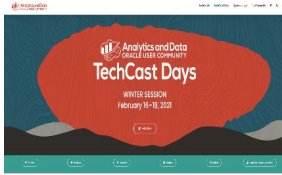
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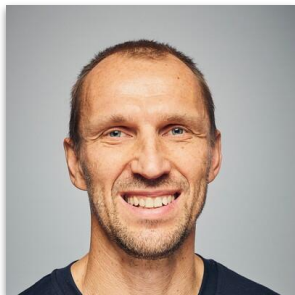


# Pythian's AI Journey with UMass: From AI Assistant to AI Agents!



PythAI

# Speaker Intro!



**Jon Mead**

Senior Vice President, Professional Services | Managing Director, Europe  
**Pythian**



**Ambili Thottathil**

Analytics - Principal Consultant | Oracle Ace Director | Oracle Analytics Ambassador  
**Pythian**



# Agenda

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Problem Statement & Objectives

2

The Solution Overview

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Deep Dive: AI Assistants & AI Agents + Best Practices & Learnings

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Q & A



# Overview: Problem Statement & Objectives



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# University of Massachusetts – By the Numbers



## University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Medical • Law

System of 5 Large Universities

- World Class Education
- Groundbreaking Research
- Impactful Service & Engagement
- Spirit of Massachusetts



**Largest Public  
University in New  
England**



**73K  
Students**



**\$4B  
Annual Budget**



**\$1B  
Annual Spend**



**20K  
Graduates Annually**



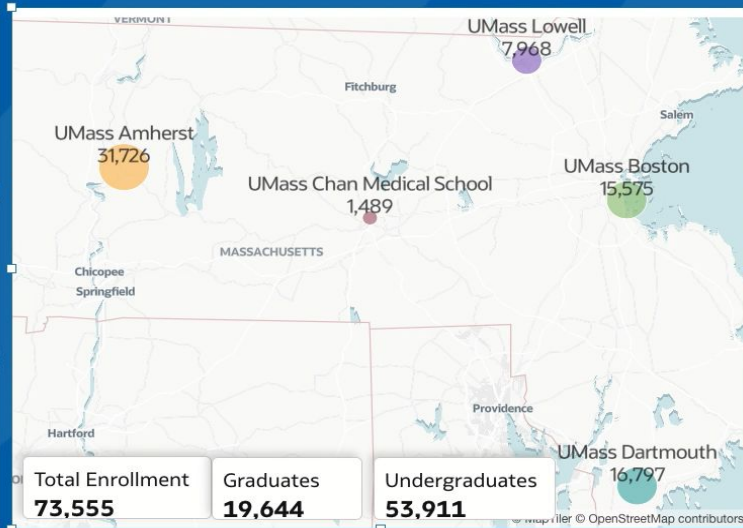
**\$826M+  
R&D**



**30K+  
Vendors**



**28K  
Employees**



# Top Challenges



**Top Challenges  
in Higher  
Education**

**Demographic  
Decline**

**Financial  
Pressures**

**Reduction in  
Research Funding**

**Increased  
Competition**



# Changing User Expectations



**Time to  
Insights**



**Data  
Accuracy**



**Traditional  
Dashboards**



**Richness of  
Insights**



**Interactivity**



**User  
Sophistication**



# The Objective

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SPARC  
Strategic Planning Analytics  
and Reporting for Campuses



- **Chatbot** experience for the SPARC Dashboards
- Make it easier for users to get **answers**, especially those **not visible on the dashboard**
- **Very Low** tolerance for hallucinations and wrong answers

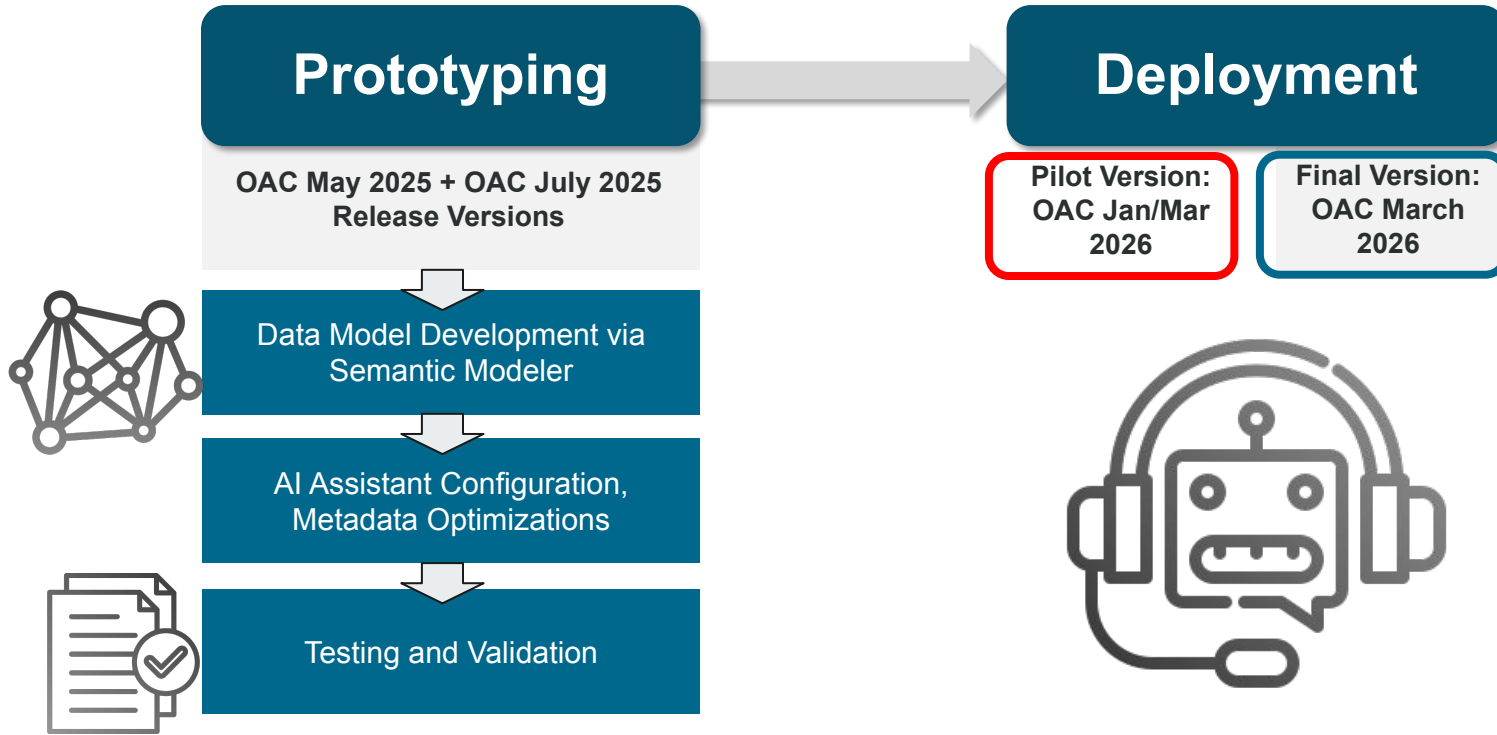


# The Solution Overview



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# High Level Plan



# The Evolution of Oracle Analytics AI Assistant & UMass Solutioning

## Rittman Mead - K12 Solution Preview with AI Assistant in AI Cloud World 2024

- GA (10+ OCPUs)
- Datasets
- Authors only
- 150 columns
- English only

Winter 2024

Fall 2024

- SAs
- Synonyms
- 3rd Party LLM Integration
- Authors only
- 450 columns

## UMass - Prototyping Phase

- Broad Availability
- Authors only
- OAC/ Gen AI LLM
- 2000 Columns

Summer 2025

Spring 2025

- Consumer Access
- Ad-hoc Calculations
- Smart Filters
- LLM Narratives
- 8 Languages

## UMass - Pilot Build Phase

- Embedded AI Assistant Anywhere
- AI Agents
- Document Knowledge
- Next Gen Home
- Built-in Feedback Loop

Spring 2026

Fall/Winter 2025

- Enhanced Conversational Experience



# Deep Dive: The AI Assistant



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# How does Oracle Analytics AI Assistant work?



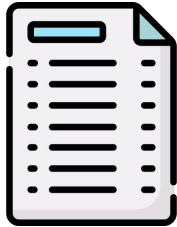
**The UMass  
Prototype Story**

- Limited scope data model created from scratch
- 20 Test Questions of varying complexity identified
- Extensive testing, validations and metadata optimisations



- ★ Configuration of AI Assistant
  - Datasets
  - Subject Areas
- ★ Live Testing
- ★ Validations
- ★ Optimisations

# Best Practices: Metadata Optimisation



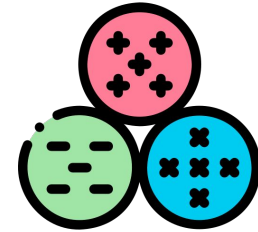
## Indexing

- Identify frequently filtered columns
- Help the LLM understand your data
- Control what users can ask about



## Synonyms

- Disambiguate similar data columns
- Help LLM identify defaults
- Clarify technical metadata for the LLM



## Binning & Grouping Data

- Create quick access groups for numerical & categorical data
- Enrich data with smart suggestions



# Deep Dive: The AI Agents



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# What are AI Agents?



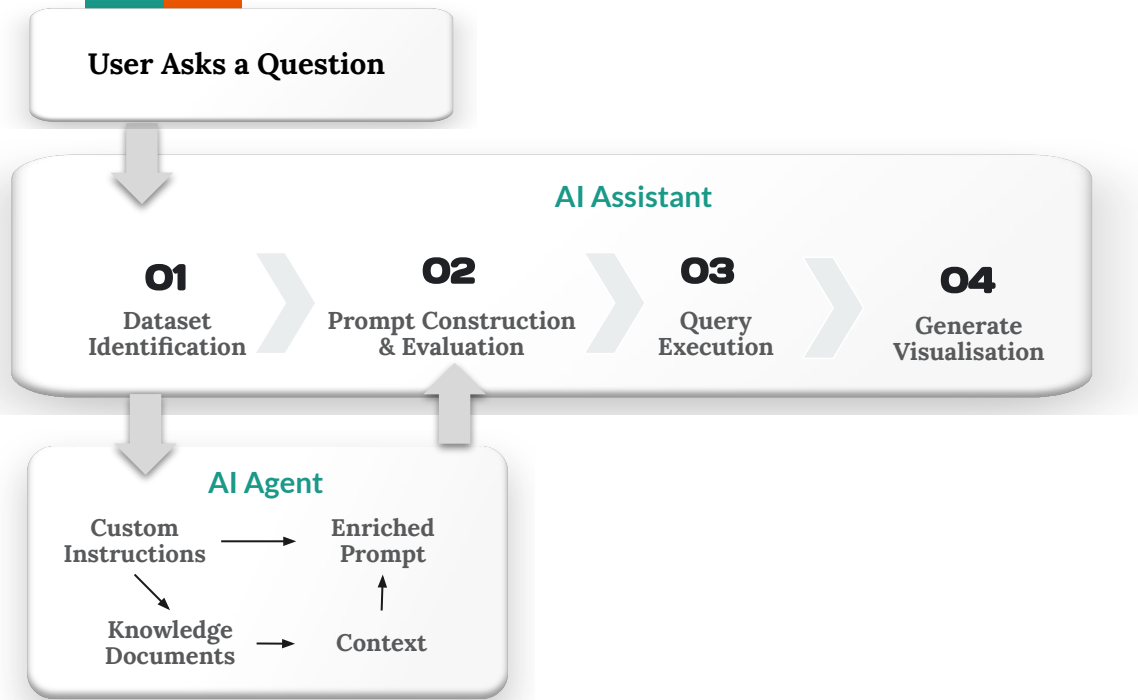
Intelligent software entities that can:

- Access **Enterprise Knowledge**
- Understand **User Intent**
- Perform **Complex Tasks**
- **Extend LLM access to domain knowledge documents (RAG)**

# When to use AI Agents?

- Created by Authors - **for Consumer users**
- When you need a highly specialized, domain specific functional expert.
- Associated with a specific dataset, curated knowledge documents and tailored instructions

# How does Oracle Analytics AI Agents work?



## The UMass Pilot Build Story

- Scope defined with 3 main domains under Phase 1
- Data model built from scratch in Oracle
- 100 Consumer questions identified with varying complexity
- LSA with defined scope (based on consumer questions) built on top of the subject area
- AI Agent configuration with clearly defined prompts for domain specific customisations
- Knowledge documents uploaded defining policies, examples, custom calculations, etc.
- Extensive testing, validations, optimisations in progress
- Phase 2 - to include AI Assistant/ Agent embedding in Tableau dashboard in production + Feedback pipeline build and analytics



- ★ Creating AI Agents
- ★ Live Testing
- ★ Validations
- ★ Optimisations via:
  - Supplemental Instructions
  - Document Knowledge

# Best Practice: Creating an OAC AI Agent

## Identify Agent Scope

- Consumer questions that the agent should manage - identify first
- Helps in effective testing



## Meaningful Dataset Creation

- Create a meaningful dataset from a well defined data model
- Keep the scope limited in the LSA / Dataset

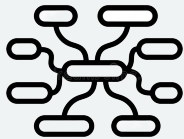


## Optimisations

- Supplemental Instructions
- Domain Knowledge Documentation
- Contextual Filters
- Examples / Sample questions



# Best Practices: Knowledge Document



## 01. Disambiguate

Avoid attribute redundancy and vagueness in the context.



## 02. Descriptive Metadata

- Make column names meaningful.
- Set enterprise context (Fiscal timelines, regions, hierarchies).



## 03. Examples to Learn From

Feed examples with question + SQL pairing for the model to learn from.

### LIMITS

- Only PDF and text formats are supported.
- Maximum of 10 Knowledge Documents (5MB limit per file).



# Feedback Capabilities



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# User Feedback: Why it matters?

Diagnostic logs from Oracle Analytics Cloud help administrators, developers, and support teams to monitor:

- ✓ System behavior
- ✓ Errors and warnings
- ✓ User request traces
- ✓ AI Assistant reaction details
- ✓ Data model context
- ✓ Performance and execution metadata
- ✓ Additional JSON metadata for deep analysis

Welcome AMBILI!

- Assistant requests are always processed within a secure OCI environment. Requests may be routed to another OCI region for processing.
- Language support notice

What is the current fiscal year?

The current fiscal year is not explicitly stated in the provided information, but based on the given timestamp of 2026-04-28, it can be inferred that the current fiscal year is likely 2026, assuming a standard fiscal year that starts on January 1 or July 1.

Generated from Gen AI built-in knowledge



```
"additionalDetails": {  
  "parentEcid": "e9d99d5d-2884-4d58-adad-670313bd0e30-0000d31f",  
  "feedback": "negative",  
  "datamodelName": "'2a41b2d1-d844-4f16-a71e-0af3f9939d88', 'Retail Sales'",  
  "feedbackDetails": "Too much text in ambiguity",  
  "feedbackCategory": "OTHER",  
  "utterance": "how well is the store utilizing its area "  
}
```

# How the data flows



## OAC Interaction

OAC generates diagnostic logs as users interact with the AI Assistant.



## OCI Logging

Logs are centrally collected by Oracle Cloud Infrastructure Logging



OCI Object Storage

## Object Storage

Pushed to OCI Object Storage in compressed JSON format




## Autonomous DB

Ingested using SQL and transformed into analytics-ready structure



## Analysis

Analyzed using Oracle Analytics Cloud dashboards

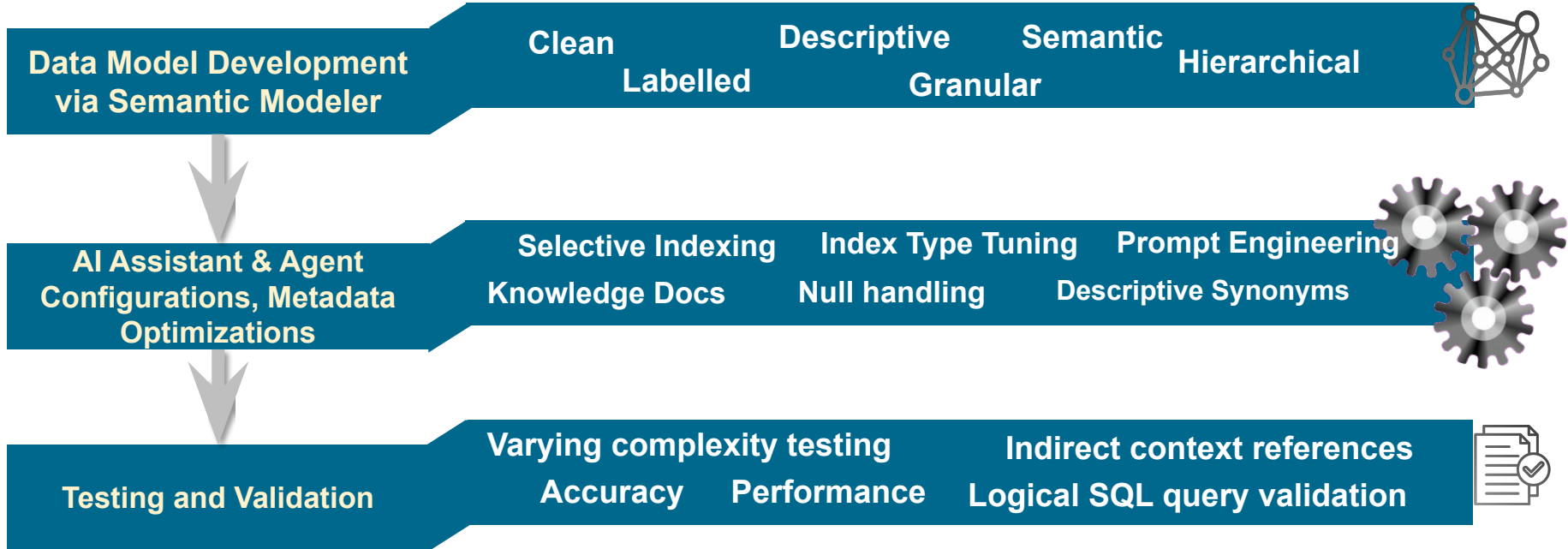


# UMass Solutioning: The Experience & Learnings - Summary!



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# The Experience





# Learnings

## To Remember!

Start with the end in mind!

Optimized, Context aware Metadata - key to accuracy

Try and trick the AI Assistant/ Agent in testing and be deliberate in validations

## Impressive!

The speed of evolution & sophistication



Ability to enrich prompts using examples / explicit instructions - via AI Agents

## Improvements

Multi-agent interactions | Dynamic parameters | Multiple LLMs to choose from



# In the Pipeline: Enhancements to Watch for



- ★ Reasoning
- ★ Agent Hub
- ★ AI Skills
- ★ Multiple LLMs as options
- ★ Dynamic Parameters
- ★ Repository & Session Variables





**Thank you.**



# Helpful Links –

## **ORACLE ANALYTICS VIDEOS:**

<https://www.youtube.com/@OracleAnalytics/videos>

## **OAC NOVEMBER 2025 AND JANUARY 2026 NEW FEATURES VIDEOS BY ORACLE:**

<https://bit.ly/OACNov25Features>

<https://bit.ly/OACJan26Features>

## **OAC NEW FEATURES DOCUMENTATION BY ORACLE:**

<https://docs.oracle.com/en/cloud/paas/analytics-cloud/acswm/index.html#GUID-CFF90F44-BCEB-49EE-B40B-8D040F02D476>

## **ORACLE ANALYTICS COMMUNITY:**

<https://community.oracle.com/products/oracleanalytics>

## **ORACLE ANALYTICS LIBRARY/EXAMPLES:**

<https://www.oracle.com/business-analytics/data-visualization/examples/>

## **ORACLE ANALYTICS LIVE DEMOS:**

<https://www.oracle.com/business-analytics/data-visualization/demos/>

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