**1 Description of the Challenge and Recommended Tools to Use**

**🧠 Challenge Description**

**Monterro** and **Cillers** invite you to the Nordic Software AI Hackathon with the challenge:  
**“Reimagine Workplace Learning With AI.”**

The objective is to design a solution where AI and LLM technologies:

* Understand individual learning needs in the workplace
* Generate personalized content in real time
* Create simulated learning scenarios (e.g., team exercises)
* Analyze and recommend learning pathways based on communication data  
  (Source: [cillers.com](https://cillers.com), [hackaping.com](https://hackaping.com))

The hackathon will be held on August 20 at Stockholm Waterfront, where finalists will pitch their solutions to 1,200 C-level executives.  
The winning team receives a trip to Cambridge University (travel and accommodation for up to 6 participants).  
(Source: [baaboom.confetti.events](https://baaboom.confetti.events), [linkedin.com](https://linkedin.com), [cillers.com](https://cillers.com))

**🚀 Recommended Tools and Technologies**

**1. LLM / Generative AI**

* OpenAI GPT-4, Anthropic Claude, Google PaLM – for generating personalized learning content and dialogues
* LangChain, OpenAI Functions, or other LLM frameworks – for structuring conversations, retrieving data, and dynamically creating learning paths

**2. Data storage & indexing**

* Couchbase Capella – document storage with vector search (used in previous hackathons)
* Redpanda – event stream processing, useful for live simulations
* Vector databases like Pinecone, Weaviate, or Milvus – for embedding-based search

**3. API Gateway & Authentication**

* Kong, Curity, or OAuth/OpenID Connect – for secure access control, especially when handling sensitive data

**4. Frontend & Interaction**

* Web frameworks like React, Vue, or chatbot UIs (e.g., Web Chat UI)
* Visualization tools: D3.js, Chart.js, or Figma plugins – for prototyping and interactive learning simulations

**5. Simulation/Game Engines**

* Unity, or simpler libraries like Phaser.js – suitable for role-based or scenario simulations

**6. AI/ML Pipelines**

* Databricks, TensorFlow, PyTorch, or Hugging Face Transformers – for advanced model training or analytics

**7. Cloud Platforms**

* Google Cloud (Cloud Run, Vertex AI), AWS (Lambda, SageMaker), or Azure – for scalable deployment and backend operations

**📋 Suggestions for architecture**

| **Layer** | **Technology stack** |
| --- | --- |
| **API/Backend** | **Node.js/Python with authentication via Kong/Curity** |
| **AI-lag** | **LLM + embeddings via LangChain; vector search with Couchbase veya Pinecone** |
| **Data platform** | **Couchbase Capella, Redpanda for real-time streaming** |
| **Frontend** | **React + chatbot interface or a simple simulation in Unity/Phaser** |
| **Infrastructure** | **Hosted in the cloud, automation via Docker + Cloud Run/AWS Lambda** |

**🎯 Execution Tips**

1. Start small: Prototype a chatbot that asks users what they want to learn, and responds with a brief, personalized learning module (LLM + embedding search).
2. Iterate fast: Expand into adaptive recommendations, analytics, or group-based simulations**.**
3. Use sponsor tools: Leverage Couchbase, Redpanda, Kong, Curity, Databricks, and Polytope – sponsors typically provide support and credits during the hackathon.  
   (Source: [cillers.com](https://cillers.com), [couchbase.com](https://couchbase.com), [hackaping.com](https://hackaping.com), [linkedin.com](https://linkedin.com), [confetti.events](https://confetti.events)) [cillers.com+2couchbase.com+2hackaping.com+2](https://www.couchbase.com/blog/couchbase-partners-cillers-nordic-ai-hackathon/?utm_source=chatgpt.com)[linkedin.com+3baaboom.confetti.events+3couchbase.com+3](https://baaboom.confetti.events/nordic-software-hackathon-at-waterfront?utm_source=chatgpt.com).

**🔧 Suggested Tech Stack to Get Started**

* **LangChain + OpenAI GPT-4 –** modular LLM logic
* **Couchbase Capella** – database backend with embedding/vectorsearch support
* **Kong / Curity –** secure API authentication
* **React + Web Chat UI –** dynamic frontend and dialogue interface
* **Google Cloud Run –** for serverless deployment
* **Docker + GitHub Actions –** CI/CD automation pipeline

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