Runtime Architects — Microsoft Mentorship Meeting Minutes

Date: 19 June 2025

Time: 12:02 – 12:49

Location: Online Call

Attendees:

- Pablo Periañez Cabrero
- Aditya Bhargav Akella
- Nithyakamal Ilamurugu (Kamal)
- Firose Shafin
- Saeed Misaghian (Microsoft)

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1. UI and Backend Integration Progress

- **Pablo** presented the simplified UI adapted from Microsoft's template:
  - Connected to a basic agent running on FastAPI.
  - Demonstrated how the interface interacts with the backend through a /ask POST endpoint.
  - Backend handles conversation context and can be expanded with streaming response capability.
- Saeed praised the clean structure and suggested optionally implementing **streaming responses** (word-by-word display), if time allows.

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2. Scraper Enhancement (Firose)

- Firose extended the scraper:
  - Integrated **API-based real-time data** for fast access.
  - Added **CSV scraping** as a fallback for missing values (e.g., solar generation or forecast).
  - CSV data is parsed and converted into JSON format.
- Saeed confirmed this dual-method approach was now sufficiently robust.

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3. Multi-Agent Framework (Aditya)

- Aditya demonstrated a **multi-agent group chat setup** using Autogen v0.6 with publish/subscribe interaction:
  - Three agents implemented: **user**, **editor**, and **writer**.
  - Remaining task: incorporate **code execution logic**, as done by Kamal.
  - Planning to stream results to the UI and ensure prompt consistency.

- Saeed provided feedback:
  - Suggested making output **more deterministic and repeatable**.
  - Recommended using tools like **Azure AI Toolkit** or **Promptly** for evaluation and tuning.
  - Shared examples where simpler approaches (e.g., planner + coder + analyst) use declarative formats.

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4. Execution Agent and Docker Setup (Kamal)

- Kamal presented a **Docker-based execution system**:
  - Uses two agents: one for code generation + evaluation, one for execution.
  - Automatically installs missing dependencies (e.g., BeautifulSoup) and retries if code fails.
  - Docker containers isolate execution for security and reproducibility.
  - Transitioned from **Cerebras** to **GitHub-hosted OpenAI models** per previous recommendations.

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5. Carbon Agent Planning

- Discussion on how to handle **carbon intensity analysis** using time series:
  - Normalize data from 0 to 1.
  - Split into zones: **low**, **medium**, and **high intensity**.
  - Use this to suggest optimal usage windows (e.g., EV charging time).
- Saeed clarified:
  - This logic can be implemented as a **local function** exposed to the agent.
  - Use function tools over prompting when possible for math-heavy tasks.

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6. Upcoming Deliverables for MVP (Due: 25 June)

Component	Responsible	Status
Finalize and connect UI to agent	Pablo	In progress
Implement agent response streaming	Pablo & Firose	Optional – exploring
Complete code generation & execution in agent group	Aditya	In progress
Implement carbon intensity analysis logic	Kamal	Starting
Add policy agent with document-based RAG	Aditya	Next up
Agent output evaluation and prompt tuning	Firose	Assigned
Explore Prompt Evaluation Tools (Promptly, Azure Toolkit)	Pablo & Firose	Assigned

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7. Interim Presentation (Due: 24 June)

- The interim counts for **40% of the grade**.
- Must demonstrate:
  - Working UI linked to at least one functioning agent
  - Real (not mock) data
  - Explanation of modular agent setup and future roadmap
- **Recording submission due Monday, 23 June.**
- Live presentation scheduled for **Tuesday, 24 June.**

8. Next Mentor Meeting

- **Date:** Wednesday, 25 June 2025
- Focus: review interim feedback and discuss deployment strategies.

Meeting Adjourned

Prepared by:

Pablo Periañez Cabrero

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