Day 5: Real-World Applications & Moving Forward

From Learning to Practice

Franck Albinet

franckalbinet@gmail.com

Independent Data Science & AI Consultant

October 12, 2025

Welcome to Day 5

The Week's Journey

What We've Built Together

Day 1: Experienced the challenges, discovered the Three Gulfs

Day 2: Learned systematic prompt engineering

Day 3: Mastered evaluation methodology

Day 4: Applied synthesis to real literature review

Today: Bringing it all together and planning your next steps

Today's Objectives

A Different Kind of Day

This morning:

- See real-world implementations
- Collaboratively synthesize what we've learned
- Document our collective insights

Today's Objectives (cont.)

A Different Kind of Day

This afternoon:

- Individual lab consultations (open office hours)
- Planning your AI-assisted research workflows
- Wrapping up loose ends

Today is about transition: From course to practice

Our Approach Today

Why Day 5 Is Different

Flexible and Responsive

We've intentionally kept today open because:

- You might need more time on Day 4 topics
- Questions and discussions may have emerged
- Each lab has unique needs
- Real learning happens in application

Our philosophy: Respond to where YOU are, not a rigid schedule

This Week Is Exploratory

Shaping Something New Together

Why this course is different:

- AI for literature review is still emerging
- We're figuring out best practices together
- Your feedback shapes the approach
- No "right answers" yet - we're exploring

Contributing Together

What This Week Enables

Through this course:

- Share how AI tools work in your domains
- Contribute to IAEA/FAO lab guidelines
- Help document what works (and what doesn't)

We're all learning together

Morning Sessions

Real-World Case Studies

What's Possible at Scale

Two implementations I'll share:

1. **MARIS RAG System (IAEA Monaco)**
    - IP-aware synthesis at scale
    - Synthetic question generation for evaluation

Real-World Case Studies (cont.)

What's Possible at Scale

2. IOM Evidence Gap Mapping

- Multi-step LLM prompts
- Evaluating reports against frameworks

Goal: Show principles from this week applied in production

Why Show These?

Learning from Real Implementations

These examples demonstrate:

- How evaluation scales in practice
- IP compliance in production systems
- Multi-step workflows
- Custom tooling when needed
- Lessons learned from deployment

Collaborative Synthesis

Capturing Our Collective Learning

What I did last night:

- Pulled all your Google doc contributions
- Used SolveIt to synthesize themes and patterns
- Drafted initial structure and sections

This morning:

- I'll share what emerged
- We'll refine it together
- You'll see the synthesis workflow in action

Why This Matters

You're Co-Authors of Knowledge

This synthesis will:

- Document your insights and challenges
- Capture methodology we developed together
- Create guidelines for IAEA/FAO labs
- Potentially become a publication??

The Synthesis Process

What I Did Thursday Evening

From Raw Notes to Structure

The workflow:

1. **Collected** all Google doc observations (Days 1-4)
2. **Loaded** into SolveIt as context
3. **Identified** themes and patterns
4. **Drafted** initial sections
5. **Prepared** for your feedback

This is exactly the process we discussed in Day 4!

What We'll Do Together

Collaborative Refinement

This morning's session:

1. **I'll present** the draft synthesis
2. **You'll react:** Does this capture your experience?
3. **We'll refine:** What's missing? What's wrong?
4. **We'll decide:** What should this become?

Improvised but intentional - just like real research synthesis

Potential Outputs

What This Could Become

Possible formats:

- **Internal guidelines:** AI-assisted literature review for IAEA/FAO
- **Methodology paper:** Novel approach to research synthesis
- **Training materials:** For other institutions
- **All/None of the above?**

Afternoon: Individual Consultations

Open “Office Hours”

Tailored Support per Lab

How this works:

- Contact me as you need help
- Discuss your specific use cases
- Plan AI workflows for your research
- Get guidance on next steps

What We Can Discuss

Possible Topics

- Specific prompts for your domain
- Tool selection for your constraints
- Evaluation strategies for your use cases
- Integration with current workflows

Or anything else that would help you move forward

Why Keep It Open?

Learning from Experience

From past workshops:

- Some labs come with clear questions
- Others need time to process
- Forcing structure doesn’t help
- Best support is responsive

What Happens After Today?

The Support Plan

Continuing the Journey

After this week:

- Individual lab support (6 days total, shared across all labs)
- Help implementing what you learned
- Troubleshooting real applications
- Ongoing refinement

The Synthesis Document

Ongoing Collaboration

After today:

- I'll share the refined draft
- You can contribute asynchronously
- We'll iterate based on feedback
- Decide final format together

Today’s Schedule

Morning Timeline

Real-World + Synthesis

Sequence:

1. Real-world case studies (MARIS, IOM)
2. Break
3. Collaborative synthesis session

Timing flexible - we'll adjust based on discussion and questions

Questions Before We Start?

Setting Expectations

What to Know

- Today is less structured by design
- Your participation shapes the day
- Focus on practical application
- Think about your next steps

Any questions about:

- Today's agenda?
- The synthesis session?
- Individual consultations?
- What happens after?

Let’s Begin

First: Real-World Case Studies

Coming up:

- MARIS RAG (Monaco)
- IOM Evidence Gap Mapping