

# LLM App Full Cycle

And the role of LangSmith through it all

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# We told you so ;)

- When in February 2024 we launched the first Online Bootcamp on Generative AI and LLM App Development worldwide, we told you that this field was still in a very early stage and that you should expect a lot of changes in the coming months and years.
- A few days later, we had one of this significant changes.

# 15 Feb 2024 LangChain Announcement

- General availability of LangSmith.
- 25M Series A led by Sequoia Capital.
- Description of the Full Professional LLM App Development Cycle and the role of LangSmith through it all.

# Implications

- The business model of LangChain seems more clear.
- The stability and future of LangChain are also more clear.

# Full Professional LLM App Development Cycle

1. Prototyping: develop the first prototype of your application.
2. Beta testing: test your prototype with real users and get their feedback to make improvements.
3. Production: monitor the performance of your application and keep improving it.

# Prototyping phase: challenges

- When things go wrong, how to identify what is failing.
- How to iterate and experiment in a fast and easy way.
- How to compare the performance of alternative prompts, retrieval strategies and model choices.
- How to test the performance of the prototype.

# Prototyping phase: challenges solved by LangSmith

- When things go wrong, how to identify what is failing.
  - Have LangSmith tracing enabled since the day 1 of the development of a new LLM Application.
- How to iterate and experiment in a fast and easy way.
  - Use LangSmith Playground to iterate and experiment.
- How to compare the performance of alternative prompts, retrieval strategies and model choices.
  - Use LangSmith Comparison View to compare the performance of alternative approaches.
- How to test the performance of the prototype.
  - Use LangSmith to create a Test Dataset.



# Beta testing phase: challenges

- How to process and analyze the feedback of the initial users.

# Beta testing phase: challenges solved by LangSmith

- How to process and analyze the feedback of the initial users.
  - Use LangSmith to filter traces with negative human feedback to understand the problems behind them.
  - Use LangSmith to inspect interesting traces and enter annotations about them.
  - Use LangSmith to expand the Test Dataset by adding runs as examples.

# Production phase: challenges

- Keep processing and analyzing user feedback.
- How to measure the performance of the App.
- How to keep improving the App.

# Production phase: challenges solved by LangSmith

- Keep processing and analyzing user feedback.
  - Keep using LangSmith as in the Beta Testing phase.
- How to measure the performance of the App.
  - Use LangSmith to monitor key metrics.
- How to keep improving the App.
  - Use LangSmith to mark different versions for A/B Testing of prompts, models or retrieval strategies.

# In preparation: next features of LangSmith

- Support for regression testing.
- Ability to run online evaluators on a sample of production data.
- Better filtering and conversation support.
- Easy deployment of applications with hosted LangServe.
- Enterprise features to support the administration and security needs for our largest customers.