

**ONLINE ART
GALLERY**

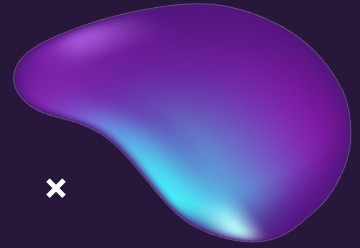
Distributed Systems Challenge Task

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Michael Schütz
Miles Strässle





AGENDA



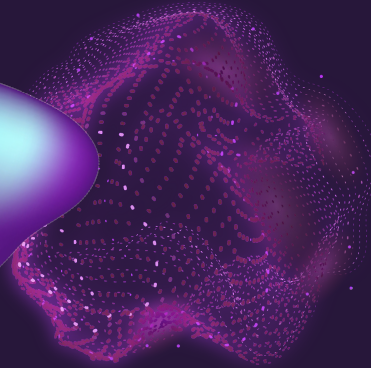
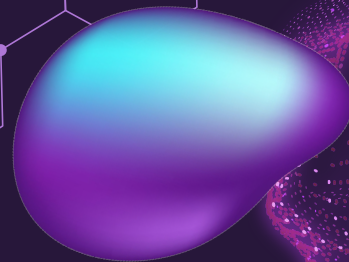
- 01 INTRODUCTION**
- 02 TECHNOLOGY STACK**
- 03 DESIGN DECISIONS & ARCHITECTURE**
- 04 DEPLOYMENT**
- 05 DEMONSTRATION**

01

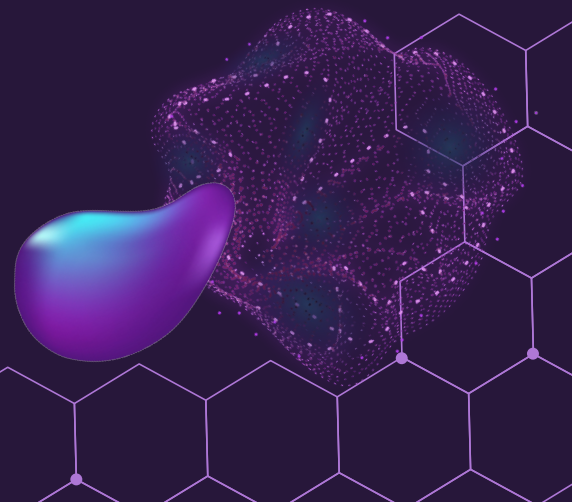
INTRODUCTION



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02 TECHNOLOGY STACK



LOADBALANCER

Traefik is a modern and dynamic reverse proxy and load balancer.



FRONTEND

AlpineJS is a very lightweight but yet powerful JavaScript framework (<22kB!).



BACKEND

FastAPI is an easy to use web framework for building APIs with Python.



DATABASE

PostgreSQL is a powerful open-source RDBMS.



IMAGE SOURCE

DALL-E 2 is an AI powered image generator created by OpenAI (known for ChatGPT)

× **LOADBALANCER** Traefik



- ◆ Efficient to use, open source
- ◆ Includes web-based dashboard
- ◆ Interactive documentation (OpenAPI)
- ◆ Supports HTTP/3

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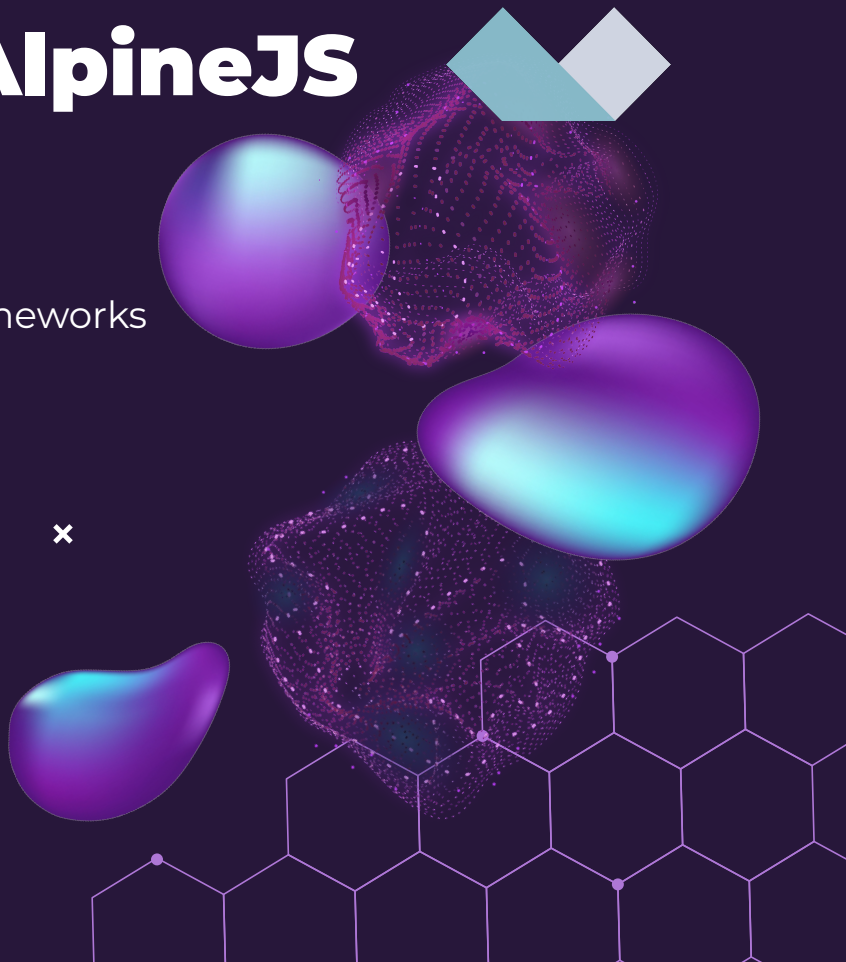
FRONTEND AlpineJS



- ◆ Lightweight (21.9kB), open source
- ◆ Based on declarative syntax
- ◆ Low learning curve compared to larger frameworks

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BACKEND FastAPI



- ◆ Efficient to use, open source, free
- ◆ Web framework for building APIs with Python
- ◆ Interactive documentation (OpenAPI)
- ◆ Includes Swagger by default

Art Gallery API 0.0.1 OAS3
[/openapi.json](#)

Simple FastAPI that provides the data to our lovely frontend ❤️
[Contact Michael Schütz](#)

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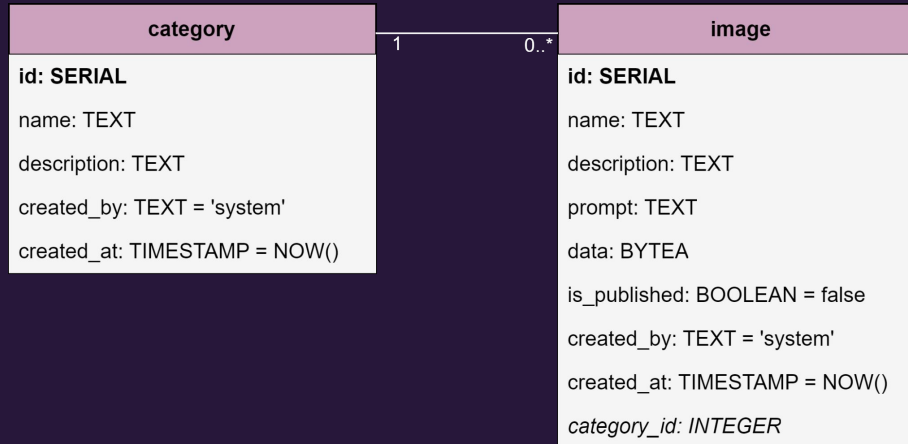
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GET	/images	Get Images	✓
GET	/images_by_category_id	Get Images By Category Id	✓
POST	/generate_and_save_image	Generate And Save Image	✓
PUT	/update_image_publish_status/{image_id}	Update Image Publish Status	✓
GET	/published_images	Get Published Images	✓

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× DATABASE PostgreSQL



- ◆ Fast, open source, free
- ◆ Relatively easily scalable
- ◆ Uses MVCC instead of locking
- ◆ Possible improvement: Store images in separate filesystem

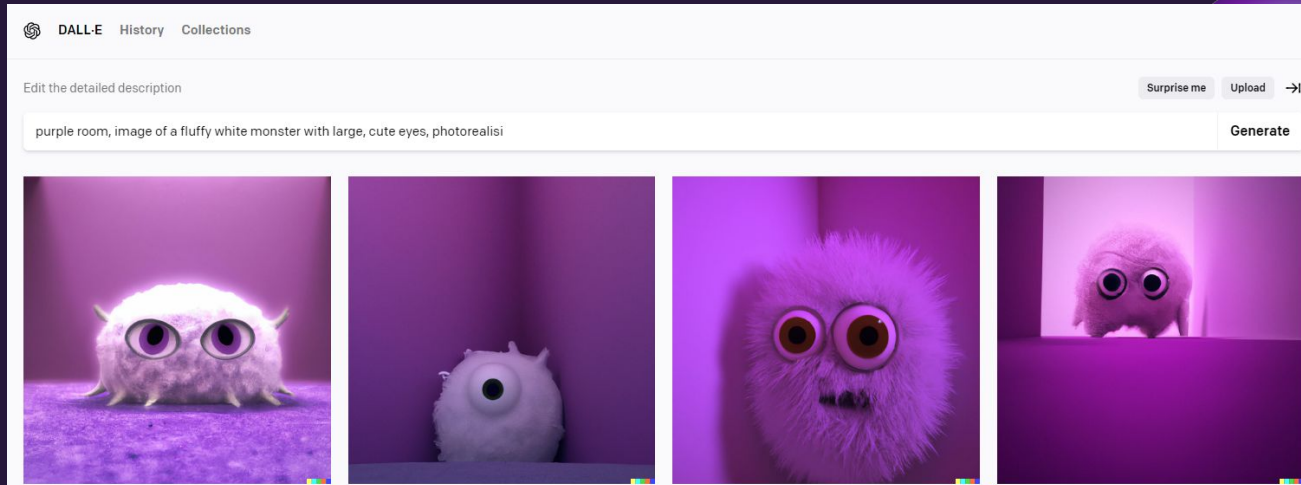


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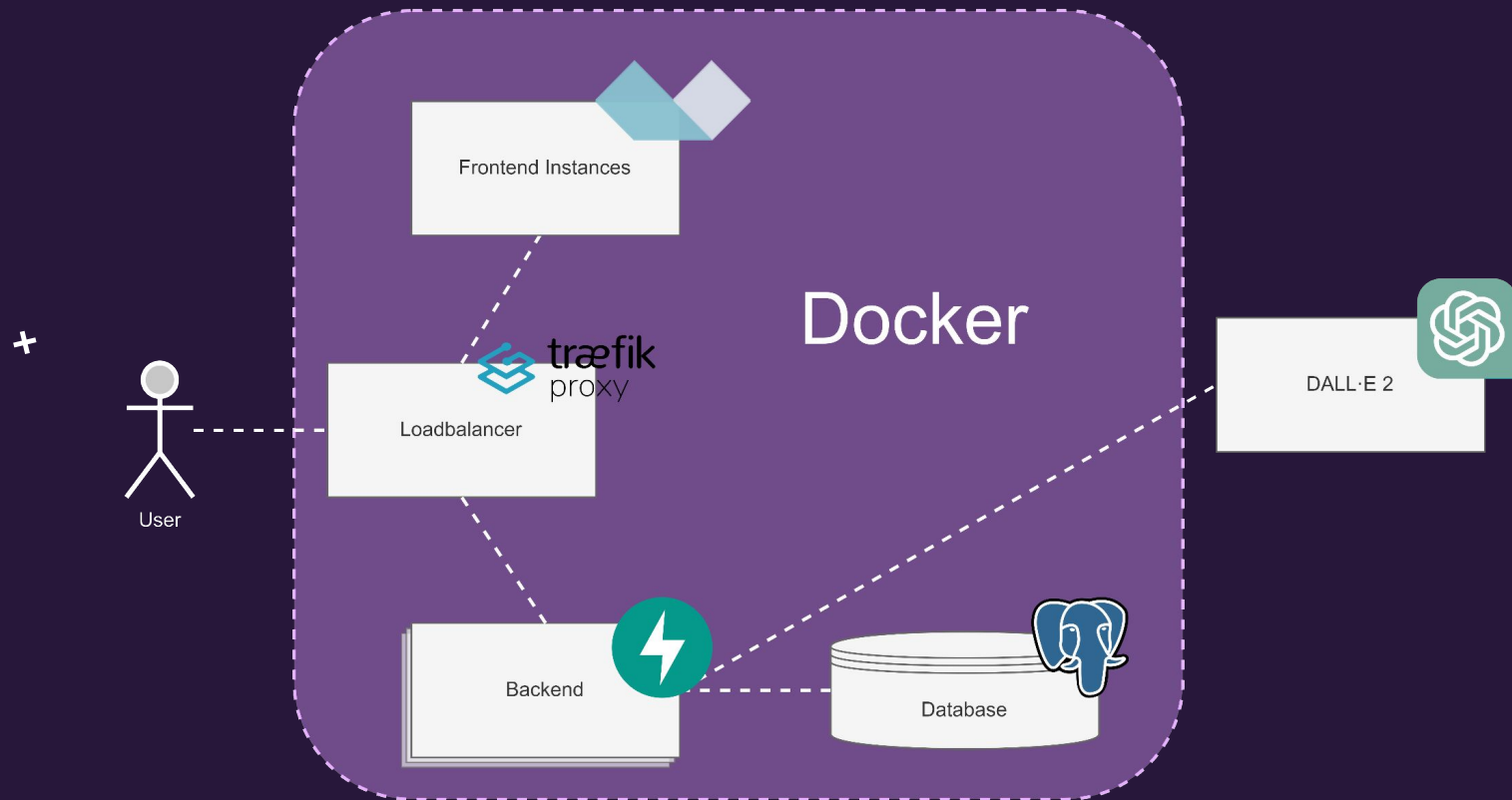
× IMAGE SOURCE DALL-E 2



- ◆ Large language model by OpenAI, closed source
- ◆ Offers free tokens
- ◆ Easy to use



04 DESIGN DECISIONS & ARCHITECTURE



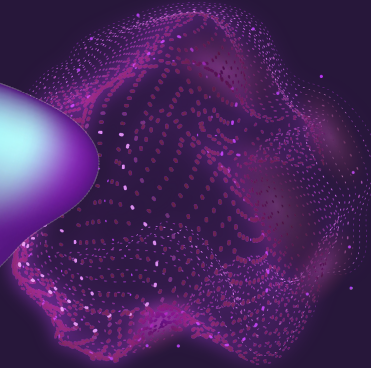
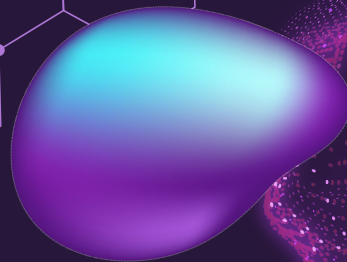
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DEPLOYMENT

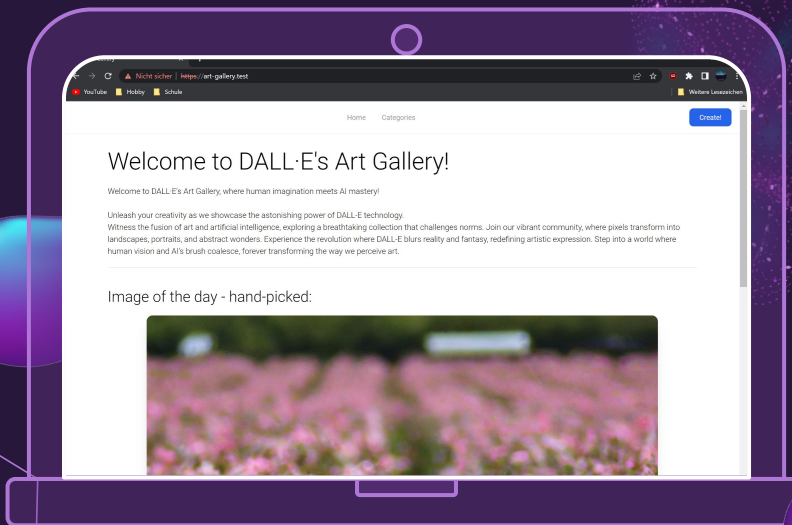
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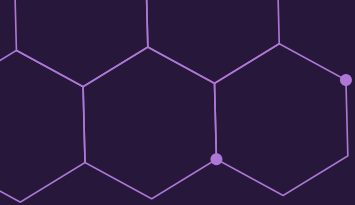
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05 DEMONSTRATION





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QUESTIONS

“I have no special talent, I am only passionately curious.”

—**Albert Einstein**

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