

CONF'

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ML Engineer @ LeBonCoin

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leboncoin
tech

“Évaluation des RAG : Le Bon, la Brute et le Troublant”



Le 09/10/2024 à 19h
7bis Bd de Berlin, 44000 Nantes



[sf≡ir] lonestone

Qui n'est jamais venu au meetup Gen AI Nantes ?

GenAI Nantes



15 événements / an



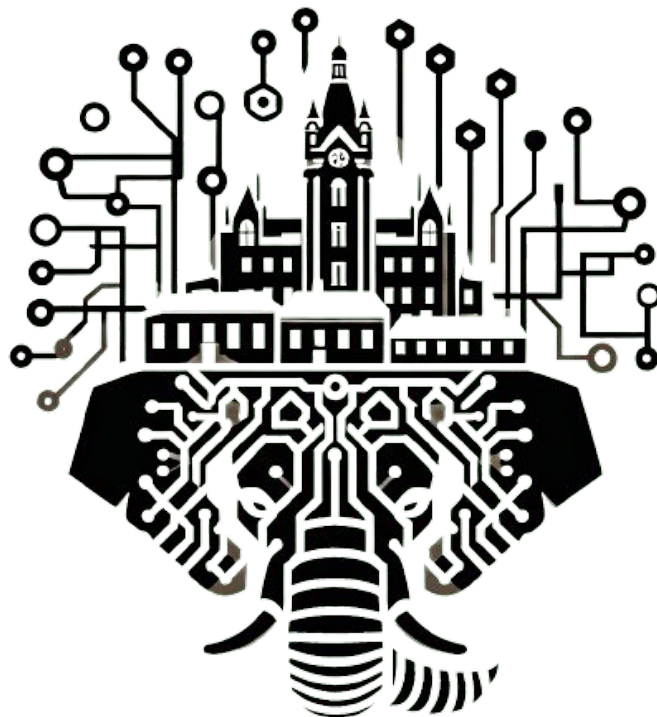
1 hackathon



2 workshops



1 communauté de 400p



 **Save the date!**

Shift revient en 2025,
du 28 au 30 mars.



Qui fait des projets GenAI ?

Schedule

 1- News summer 2024

 2- QA in the LLM wonderland

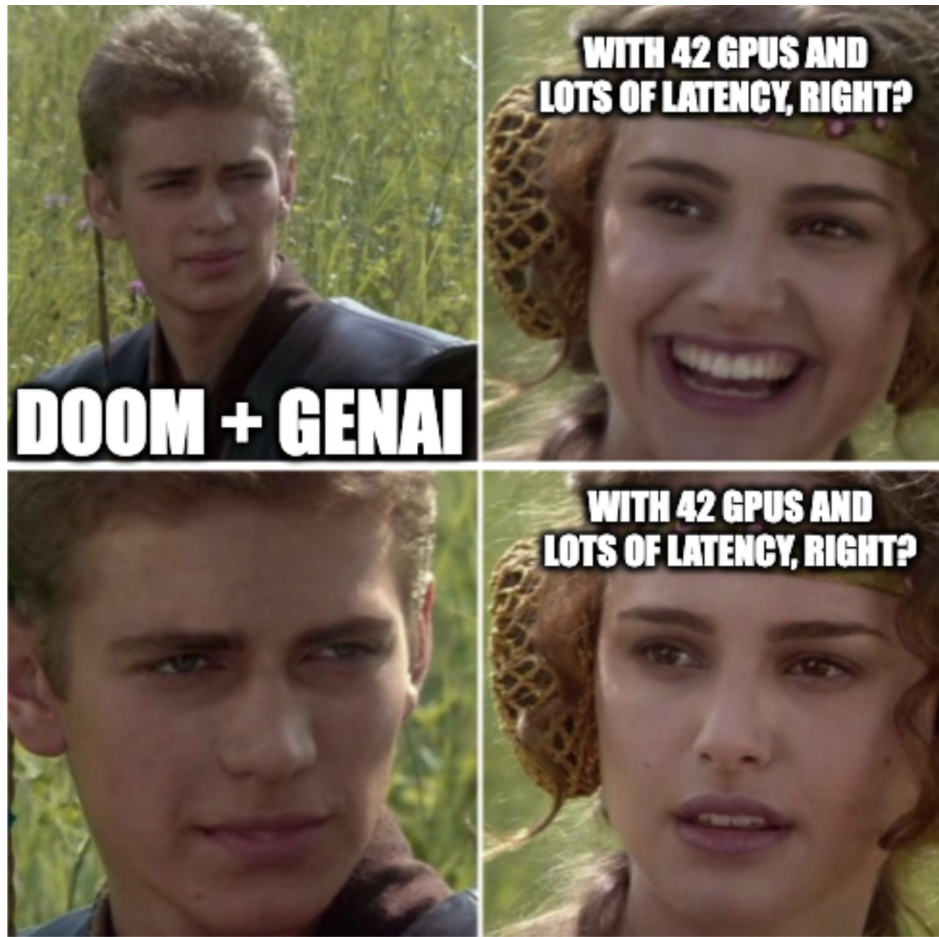
 3- Enjoy

GameNGen



<https://gamengen.github.io/>

GameNGen



GameNGen

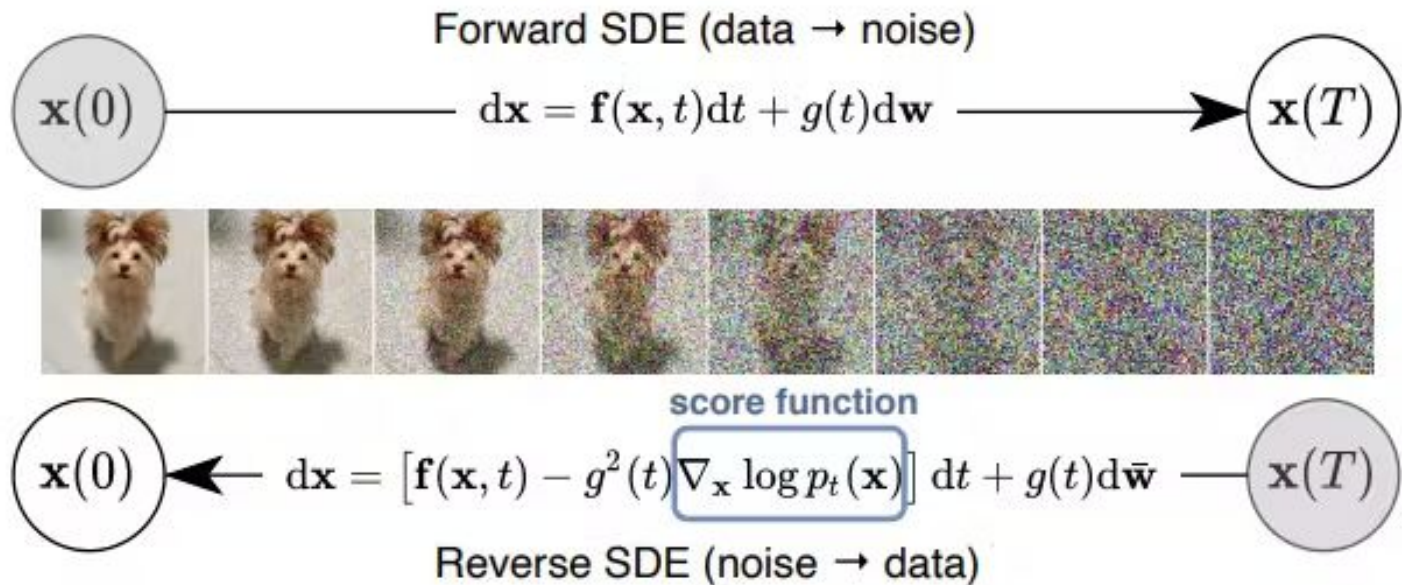
 Doom

 20 FPS

 Real-time

 1 TPU v5

About diffusion models



About diffusion models



Steps: 15



Steps: 25



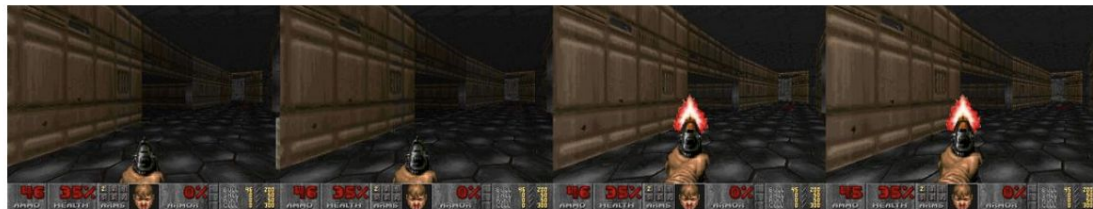
Steps: 45



Steps: 75

Denoising -> predict next image

Past Observations



Prediction



Ground Truth



Training



700k steps from 900m frames,
with user inputs



128 TPU v5

(+ some fine-tuning)

Inference

Context window:
64 past frames

(20 frames x 3s)

Inference latency

4 steps per frame

50ms per frame

20 frames per second

Game state in the HUD



Physics



A basic game dev

1- gather user inputs

2- update the game state (game engine)

3- graphic rendering

A basic game dev

1- gather user inputs

2- ~~update the game state (game engine)~~ **Stable diffusion**

3- ~~graphic rendering~~ **Stable diffusion**

New paradigm

No more game **dev** ?

Only **big** GPUs ?



+ GameNGen

+ Prompts

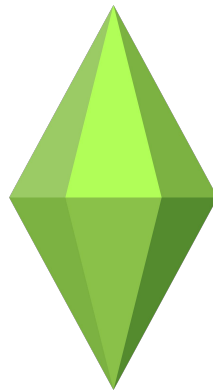
= ?



+ GameNGen

+ Prompts

=



Limits

20 FPS

Limits

320*240 px

Limits

Game state must be in the screen / HUD

Limits

Small context window
(64 frames)

3 seconds memory

Limits

Multiplayers KO

One more thing

RL agent to generate a training dataset
of actions + frames

DIFFUSION MODELS ARE REAL-TIME GAME ENGINES

Dani Valevski*
Google Research

Yaniv Leviathan*
Google Research

Moab Arar*
Tel Aviv University[†]

Shlomi Fruchter*
Google DeepMind

ABSTRACT

We present *GameNGen*, the first game engine powered entirely by a neural model that enables real-time interaction with a complex environment over long trajectories at high quality. GameNGen can interactively simulate the classic game DOOM at over 20 frames per second on a single TPU. Next frame prediction achieves a PSNR of 29.4, comparable to lossy JPEG compression. Human raters are only slightly better than random chance at distinguishing short clips of the game from clips of the simulation. GameNGen is trained in two phases: (1) an RL-agent learns to play the game and the training sessions are recorded, and (2) a diffusion model is trained to produce the next frame, conditioned on the sequence of past frames and actions. Conditioning augmentations enable stable auto-regressive generation over long trajectories.

Paper:

<https://arxiv.org/pdf/2408.14837>



Figure 1: A human player is playing DOOM on **GameNGen** at 20 FPS. See <https://gamengen.github.io> for demo videos.

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Custom eye tracking system

Miniaturized cameras enable accurate eye tracking in this form factor

Speakers and batteries

Miniaturized speakers and shaped batteries

Approx. 70 degree FoV

Enabled through use of Silicon Carbide & microLEDs

Micro LEDs

Optimizes for color correction, power, brightness, form factor

Silicon carbide

Waveguide enables the large FoV, no stray optical artifacts, lighter than glass

Magnesium alloy

Manage durability with thermal & weight distribution

Custom silicon and miniaturized sensors

Multiple custom silicon chips, 7 cameras

https://x.com/adcock_brett/status/1840422104904188221

secret camera



let you identify anybody

GLASSES POV







OpenAI
DevDay

new features



AI captions with submagic

Wanderlust Discover Assistant

📍 Annotated map

🗨️ There we go, Fort Mason! What do you need help with there?

Well, I have a few hundred awesome developers here in the room and I'm thinking they might need a little snack. Do you have some chocolate shops around here?

📍 Annotated map

🗨️ Absolutely! Check out Ghirardelli Square, Ilan's Strawberries, and The Candy Store!

Great! Can you show me more details about these three places?

📄 Displayed details

🗨️ Details are up! Ghirardelli Square offers iconic sundaes, Ilan's Strawberry Lane has delectable chocolate-covered strawberries, and The Candy Store is your go-to for vintage sweets! Enjoy!

Ghirardelli Square
Iconic chocolate shop with sundae.

Ilan's Strawberries
Cute chocolate-covered strawberries shop.

The Candy Store
Vintage candy and sweets galore.

<https://chatgpt.com/?model=gpt-4o-canmore>

<https://notebooklm.google.com/notebook/0c4e087e-cc32-4d60-8461-dc8fbccbdc2f/audio>

https://ai.meta.com/research/movie-gen/?utm_source=www.therundown.ai&utm_medium=newsletter&utm_campaign=meta-s-new-ai-video-generator&_bhlid=792651290d521d510fdf85d58b7a159003bac977

CONCOURS GEN AI DAYS

https://docs.google.com/spreadsheets/d/1-dMTYfAZNfyIZ4zAKsTy-n-Fgc6y_gyB1bWKst62I_Y/edit?gid=0#gid=0

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CONF'

Simon Timssale

Conférencier, Designer, Formateur

“L'IA au service des idées (appels d'offres et partie visuelle)”



_icilundi

Le **05/11/2024** à **19h**
4 rue Voltaire, 44000 Nantes



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