

DOGO: PET AVATAR PERSONALIZATION UTILIZING LATENT DIFFUSION MODELS



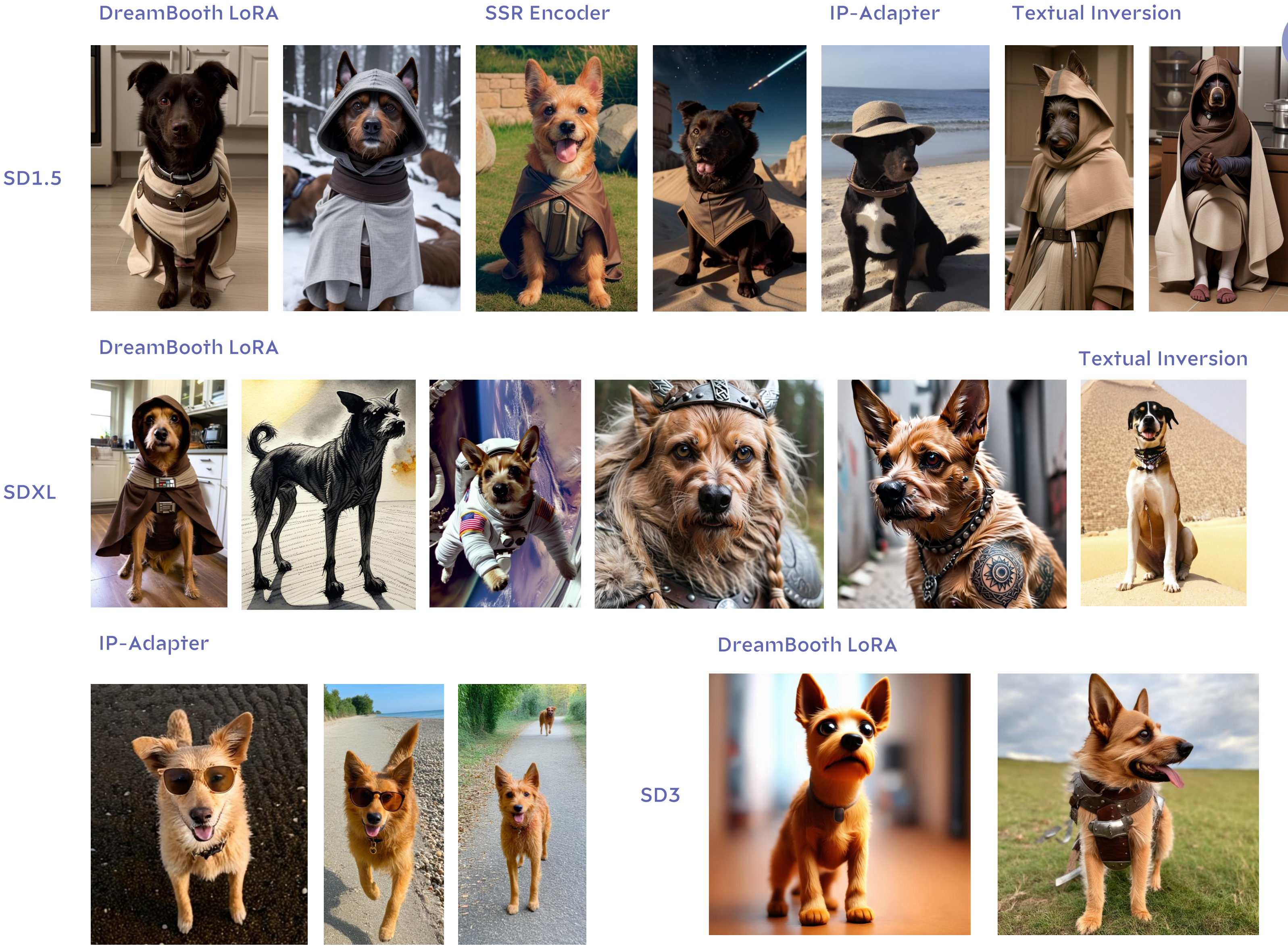
VYTAUTO
DIDŽIOJO
UNIVERSITETAS
Informatikos
fakultetas

AUTHORS: Eimantas Zaranka eimantas.zaranka@vdu.lt Monika Katilienė monika.katiliene@vdu.lt Tomas Krilavičius tomas.krilavicius@vdu.lt Tadas Žiemys tadas@dogo.app

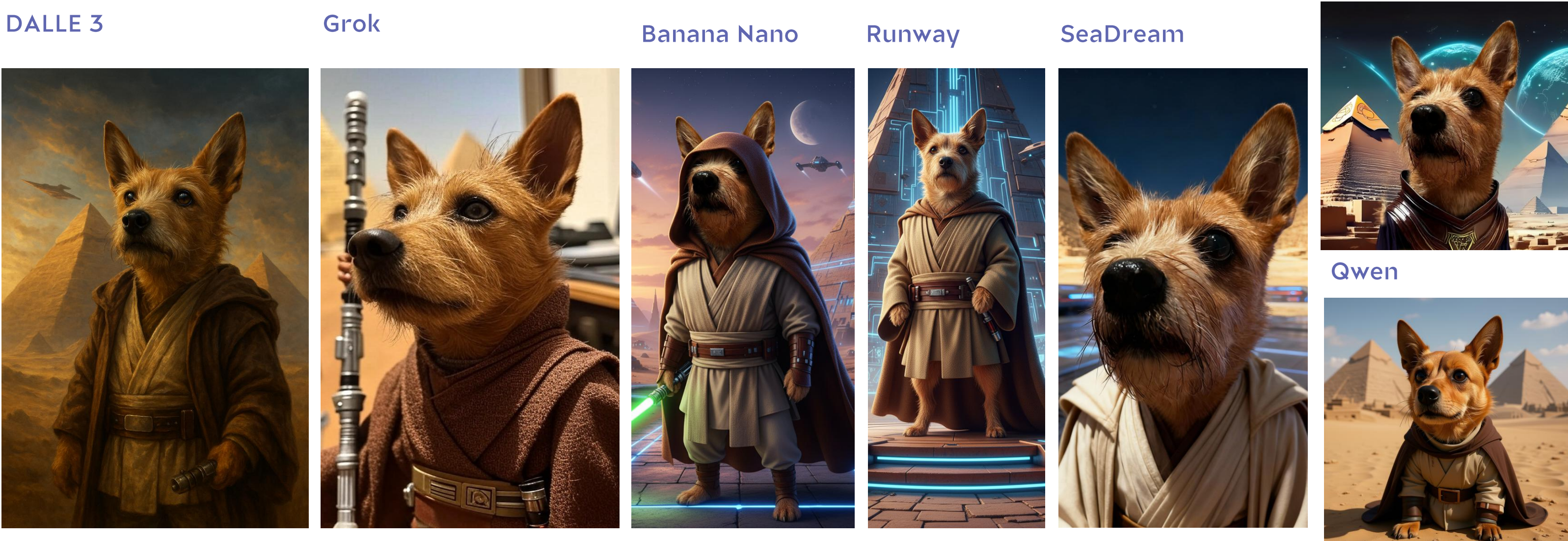
1 AIM OF THE REASEARCH

- The **aim** of this research is to investigate the application of latent diffusion-based generative models for personalised dog avatar generation.
- For this, three different fine-tuning/inference techniques: **DreamBooth LoRA**, **Textual Inversion** and **Image Prompt Adapters** with base and custom **SD1.5**, **SDXL** and **SD3** were utilized.
- Results are being compared to **DALL-E 3**, **Grok Image**, **Banana Nano**, **SeeDream**, **Adobe Firefly** and other commercial solutions.

3 RESULTS



4 COMMERCIAL RESULTS



2 DATASET



6 CONCLUSIONS

- IP Adapters** showed promising results, the results were suboptimal, where newly generated images showed feature preservation capabilities but fell short in image customisation.
- The main limitation of **DreamBooth LoRA** usage in production is the requirement for per-subject adapter training

7 FUTURE PLANS

- Development of a novel, first of its kind, IP-Adapter specialized for dog feature extraction, enabling a robust zero-shot personalization pipeline that will be efficient and preserves subject identity without a need of fine-tuning the adapter
- Implementation of full end-to-end pipeline, allowing pet owners to digitally commemorate and share their companions' achievements and unique features with the world



Co-funded by
the European Union

SustAIN
Liv
Work



CARD

CENTRE
FOR APPLIED
RESEARCH
AND
DEVELOPMENT