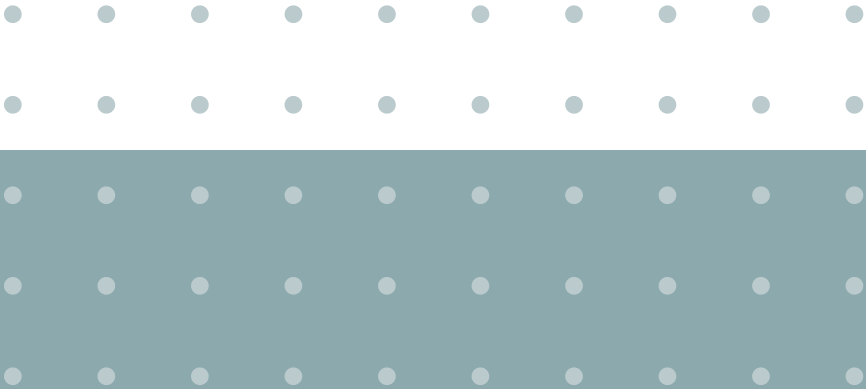




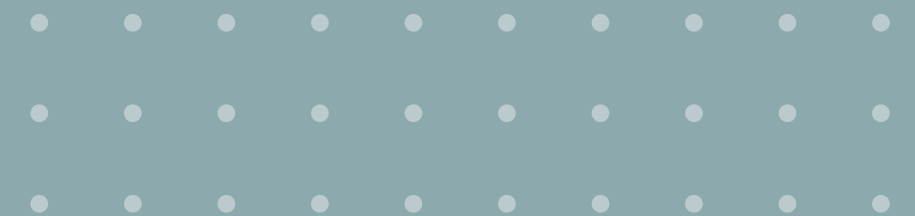
DreamSpace

Xiangjun Liu



What is DreamSpace?

- Human–AI co-created system for recording, interpreting, and visualizing dreams.
- Developed through Django + AI collaboration
- Core functions: record, save, share, AI analyze dreams (keywords, emotion)
- Future: AI-driven 2D/3D dream visualization



Dreams as Natural Language Inputs

"Language is a symbol system."

- Dream symbols (e.g., "dark room", "falling", "ocean") carry emotional + symbolic meaning
- DreamSpace converts these symbols into internal AI representations via NLP

"NLP = understanding (NLU) + generating (NLG)."

- NLU: extract keywords, detect emotions, identify themes
- NLG: generate interpretations + visualization prompts

NLP Stages: Parsing → Interpreting → Enhancing → Using)



Dreams as Ideal Uncertain Reasoning Case

Dreams = Highly Uncertain Texts

- Vague, ambiguous, illogical, emotion-driven, and no single interpretation

“probability as truth-value”

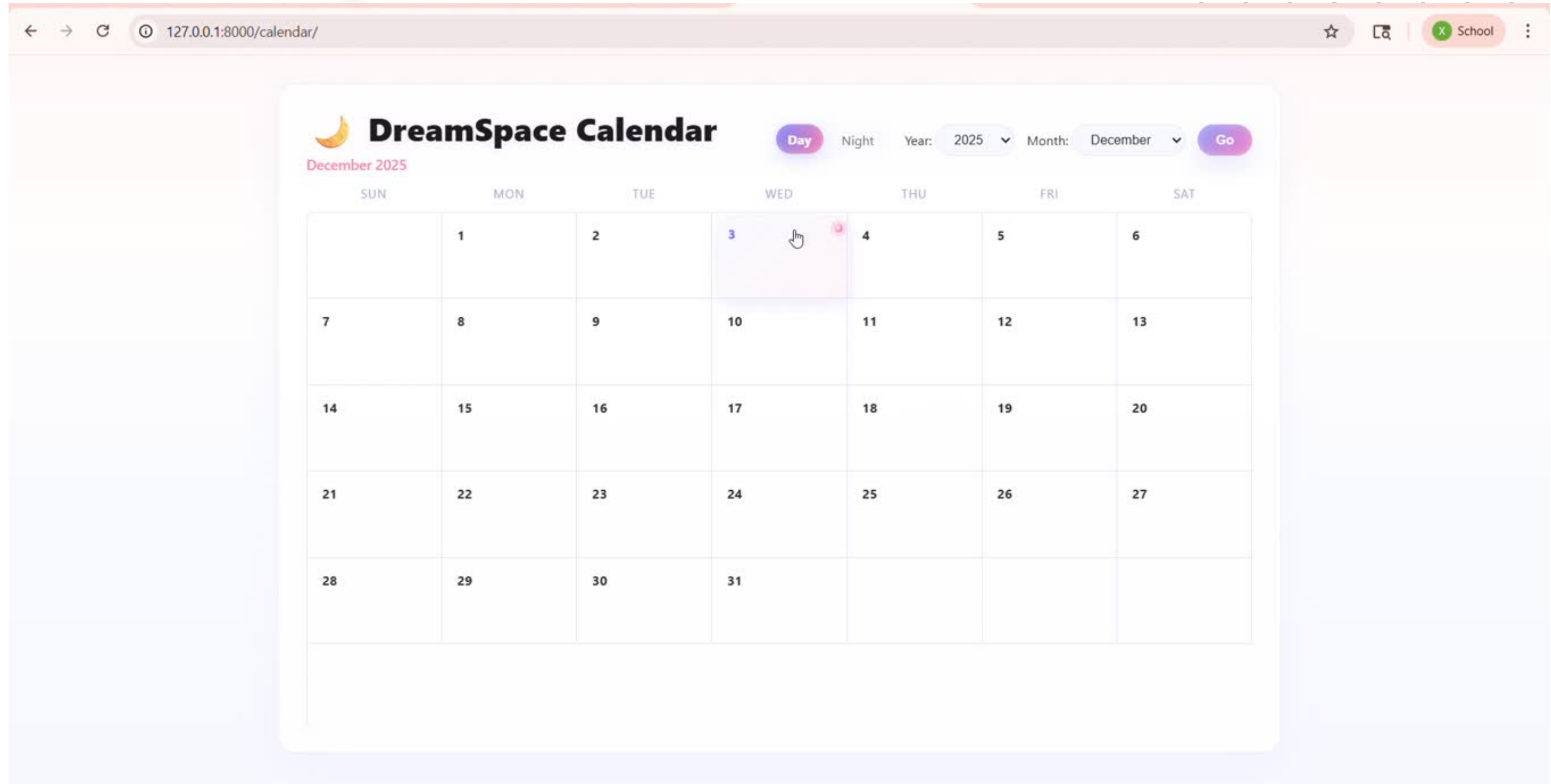
- Probabilistic Interpretation

DreamSpace applications:

- Multiple symbolic interpretations
- Confidence intervals instead of fixed labels
- Re-analysis when users add new dream details



DreamSpace



References

- [1] Zulfikar, W., Chiaravalloti, T., Shen, J., Picard, R., & Maes, P. (2025). Resonance: Drawing from memories to imagine positive futures through AI-augmented journaling. arXiv preprint arXiv:2503.24145. <https://arxiv.org/abs/2503.24145>
- [2] Liu, P., Lee, K. J., Steinmaurer, A., Picard-Deland, C., Carr, M., & Kitson, A. (2025). DreamLLM-3D: Affective dream reliving using large language model and 3D generative AI. arXiv preprint arXiv:2503.16439. <https://arxiv.org/abs/2503.16439>
- [3] McNamara, P., Duffy-Deno, K., Marsh, T., & Marsh, T. (2019). Dream content analysis using artificial intelligence. *International Journal of Dream Research*, 12(1), 42–52. <https://doi.org/10.11588/ijodr.2019.1.48744>
- [4] Bulkeley, K. (2014). Digital dream analysis: A revised method. *Consciousness and Cognition*, 29, 159–170. <https://doi.org/10.1016/j.concog.2014.08.015>

THANK YOU

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