

Kevin Frans

650-388-6495 . kvfrans@mit.edu . kvfrans.com . github.com/kvfrans

EDUCATION

Massachusetts Institute of Technology, Master of Engineering Cambridge, MA
Computer Science and Electrical Engineering, AI Concentration Expected: **June 2023**
Advisor: Prof. Phillip Isola, CSAIL Embodied Intelligence Lab
Proposed Thesis: Generalizable Reinforcement Learning via Open-Ended Task Generation

Massachusetts Institute of Technology, Bachelor of Science Cambridge, MA
Computer Science and Electrical Engineering Expected: **June 2022**
Relevant Coursework: *Computational Sensorimotor Control, Representation and Inference in AI, Linear Algebra, Signals and Systems, Computational Structures, Interconnected Embedded-Systems, Probability & Random Variables, Computer System Engineering, Creating Video Games, Computer Graphics, Signals Systems and Inference*

WORK EXPERIENCE

MIT CSAIL Embodied Intelligence Lab, ei.csail.mit.edu Cambridge, MA
Undergraduate Researcher Sep 2018 - Current

- Advisor: Prof. Phillip Isola
- Led investigation on improving world model robustness through curiosity + contrastive learning.
- Wrote and developed architecture to quickly iterate on multi-task RL algorithms

Cross Labs, crosslabs.org Kyoto, Japan
AI Research Scientist Aug 2020 - Aug 2021

- Advisors: Dr. Olaf Witkowski and Dr. L. B. Soros
- Primary investigator on AI+games, open-endedness,, meta-learning, evolutionary computation.
- Published a range of first-author papers, blogs, and open-source projects throughout the year.

Sizigi Studios, sizigistudios.com San Francisco, CA
AI Research and Engineering Intern June - Aug 2019

- Advisor: Haitao Mao
- Developed SOTA high-res portrait generation methods, successfully scaling to over 500,000+ users.
- Researched methods for character video generation from facial landmarks

Autodesk Research, autodeskresearch.com San Francisco, CA
AI Research Intern, Office of the CTO June - Aug 2018

- Advisor: Chin-Yi Cheng
- Designed and published a method for translating pixel images into vector space.
- Created automatic drawing AI and a “sketch to design file” for architecture plans.

OpenAI, openai.com San Francisco, CA
AI Research Intern, Reinforcement Learning Group June - Aug 2017

- Advisors: Jonathan Ho and John Schulman
- Vastly sped up reinforcement learning algorithms on long-term robotics tasks, utilizing hierarchical structures and meta-learning over a range of tasks

SELECT PUBLICATIONS

CLIPDraw: Exploring Text-to-Drawing Synthesis via Language-Image Encoders 2022
Kevin Frans, L.B. Soros, Olaf Witkowski
Under Review, International Joint Conference on Artificial Intelligence, arxiv.org/abs/2106.14843

Selecting for Selection: Learning To Balance Adaptive & Diversifying Pressures in Evo. Search 2022
Kevin Frans, L.B. Soros, Olaf Witkowski
Under Review, IEEE Transactions on Evolutionary Computation, arxiv.org/abs/2103.06435

SELECT PUBLICATIONS, cont.

Population-Based Evolution Optimizes a Meta-Learning Objective	2021
Kevin Frans, Olaf Witkowski Released as a Preprint,, arxiv.org/abs/2103.06435	
To Extract Information from Language Models, Optimize for Causal Response	2021
Kevin Frans, Phillip Isola Released as a blog post, kvfrans.com/causal-language-model/	
AI Charades: Language Models as Interactive Game Environments	2021
Kevin Frans IEEE Conference on Games, ieeegames.org/2021/assets/papers/paper_241.pdf	
Q's for the Open-Ended Evolution Community: Reflections from the 2021 Cross Labs Workshop	2021
Kevin Frans, L.B. Soros, Olaf Witkowski Conference on Artificial Life, workshops.alife.org/oeec4/papers/frans-oeec4-camera-ready.pdf	
Meta Learning Shared Hierarchies	2018
Kevin Frans, Jonathan Ho, Xi Chen, Pieter Abbeel, John Schulman International Conference on Learning Representations, arxiv.org/abs/1710.09767	
Unsupervised Image to Sequence Translation with Canvas-Drawer Networks	2018
Kevin Frans, Chin-Yi Cheng Released as a Preprint, arxiv.org/abs/1809.08340	
Outline Colorization through Tandem Adversarial Networks	2017
Kevin Frans Released as a Preprint, arxiv.org/abs/1704.08834	

SERVICE AND TALKS

Review: SIGGRAPH

Organize: Cross Labs Innovation Science Workshop

Talks: TED 2018, "What if AI Learned More like Humans Do?"

HONORS AND AWARDS

MIT IBM-Watson AI Undergraduate Research and Innovation Scholar	2021
Paul E. Gray UROP Researcher	2021
Interact Fellow	2019
USACO Platinum Division	2018

SELECT PROJECTS

AI Tutorials and Visualizations, kvfrans.com/tag/research/	June 2016 - Current
<ul style="list-style-type: none">Wrote 400,000+ view graphical explanations detailing generative models, autoencoders, GANs, etc.Focus on communicative design for teaching to beginners and newcomers	
Kirisame Jump Game Studio, https://store.steampowered.com/curator/37730152	June 2018 - Current
<ul style="list-style-type: none">Led assorted teams to develop indie games "RAIN Project", "Iwate Mountain Dance" +more on SteamContributed programming, game design and pixel-art spritework	
Learning to Win at Pokemon	Sep 2021 - Jan 2022
<ul style="list-style-type: none">Conducted research on training reinforcement learning agents to self-play PokemonBuilt out training infrastructure, integrated parallel game simulations and GPU calls	

SELECT SKILLS

TECHNICAL: Python, Tensorflow/Pytorch/numpy, Javascript, Java, Objective-C, C#, C++, Lua

DESIGN: Unity, Photoshop, Illustrator, Procreate, PyxelEdit (Pixel Art)

OTHER: Speak Japanese and Indonesian, 1st dan in Tae Kwon Do