ADRIEN ECOFFET

Research Scientist, OpenAI

adrien.ecoffet.com
github.com/AdrienLE
scholar.google.com/citations?user=FczrreMAAAAJ

San Mateo, CA, USA
adrien@ecoffet.com

Experience

OpenAI *(San Francisco, CA)*
Research Scientist — *May 2020 – present*

- Research on multi-agent reinforcement learning at scale.

Uber *(San Francisco, CA)*
Research Scientist — *Jun 2019 – May 2020*
AI Resident — *Jun 2018 – Jun 2019*

- Research on reinforcement learning and AI safety leading to publications in Nature, ICML, IJCAI and ALife, as well as NeurIPS workshops. Primary contributor to the Go-Explore algorithm, which was published in Nature and received press coverage from New Scientist, Scientific American, and the BBC, among others.

Quora *(Mountain View, CA)*
Staff Software Engineer — *Jul 2017 – Jan 2018*
Software Engineer — *Dec 2013 – Jul 2017*
Software Engineering Intern — *Aug 2012 – Dec 2012*

- Implemented much of the ads backend as a founding member of the ads team. Implemented several search-related products including full-text search. Significantly increased ads revenue and question answer rates through improving the ads CTR prediction and feed ranking ML models.

Education

Georgia Institute of Technology — *GPA: 4.0*
MS Computer Science – Machine Learning — *2018*
TA for *Computational Photography* and *Reinforcement Learning*

École pour l'Informatique et les Nouvelles Technologies (Epitech) — *GPA: 3.64*
BS Computer Science — *2013*
TA for *Functional Programming with OCaml*

University of California, San Diego — *GPA: 3.97*
Exchange student, Computer Science (Winter, Spring, Summer) — *2013*

Journal and Conference Publications

- **Ecoffet, A.** and Lehman, J., 2021. Reinforcement learning under moral uncertainty. *International Conference on Machine Learning (ICML)*.

- **Ecoffet, A.**, Huizinga, J., Lehman, J., Stanley, K.O. and Clune, J., 2021. First return, then explore. *Nature, 590(7847)*, pp. 580–586.

- Madotto, A., Namazifar, M., Huizinga, J., Molino, P., **Ecoffet, A.**, Zheng, H., Papangelis, A., Yu, D., Khatri, C. and Tur, G., 2020. Exploration based language learning for text-based games. *International Joint Conferences on Artificial Intelligence (IJCAI)*, pp. 1488–1494.

- Edwards, A., Sahni, H., Liu, R., Hung, J., Jain, A., Wang, R., **Ecoffet, A.**, Miconi, T., Isbell, C. and Yosinski, J., 2020, November. Estimating Q(s, s') with deep deterministic dynamics gradients. *International Conference on Machine Learning (ICML)*, pp. 2825–2835. PMLR.

- **Ecoffet, A.**, Clune, J. and Lehman, J., 2020, July. Open Questions in Creating Safe Open-ended AI: tensions between control and creativity. *Artificial Life Conference (ALife)*, pp. 27–35. MIT Press.

Other Publications

- Kanitscheider, I., Huizinga, J., Farhi, D., Guss, W.H., Houghton, B., Sampedro, R., Zhokhov, P., Baker, B., **Ecoffet, A.**, Tang, J., Klimov, O., Clune, J., 2021. Multi-task curriculum learning in a complex, visual, hard-exploration domain: Minecraft. *arXiv preprint arXiv:2106.14876*.

- **Ecoffet, A**., Huizinga, J., Lehman, J., Stanley, K.O. and Clune, J., 2019. Go-explore: a new approach for hard-exploration problems. *arXiv preprint arXiv:1901.10995*.

- Yu, D., Khatri, C., Papangelis, A., Madotto, A., Namazifar, M., Huizinga, J., **Ecoffet, A.**, Zheng, H., Molino, P., Clune, J. and Yu, Z., 2019, January. Commonsense and semantic-guided navigation through language in embodied environment. *ViGIL Workshop at the Conference on Neural Information Processing Systems (NeurIPS)*.

- **Ecoffet, A.**, Huizinga, J., Lehman, J., Stanley, K.O. and Clune, J., 2018. Montezuma's Revenge solved by Go-Explore, a new algorithm for hard-exploration problems (sets records on Pitfall, too). *Uber Engineering Blog*.

Patents and Patent Applications

- Clune, J.M., **Ecoffet, A.L.**, Stanley, K.O., Huizinga, J. and Lehman, J.A., Uber Technologies Inc, 2020. *Deep reinforcement learning based models for hard-exploration problems.* U.S. Patent Application 16/696,893.

Selected Press Articles

- **BBC News**. 2021. AI conquers challenge of 1980s platform games.
- **Scientific American**. 2021. Machine Learning Pwns Old-School Atari Games.
- **New Scientist**. 2021. AI smashes video game high scores by remembering its past success.
- **VentureBeat**. 2021. How AI trained to beat Atari games could impact robotics and drug design.
- **Der Spiegel**. 2021. Künstliche Intelligenz zockt besser als der Mensch (in German).
- **Digital Trends**. 2021. Chess. Jeopardy. Go. Why do we use games as a benchmark for A.I.?
- **Technology Networks**. 2021. Algorithm Racks Up Superhuman Scores in 55 Classic Atari Games.
- **Singularity Hub**. 2021. This AI Thrashes the Hardest Atari Games by Memorizing Its Best Moves.
- **MIT Technology Review**. 2018. Uber has cracked two classic 80s video games by giving an AI algorithm a new type of memory.

Miscellaneous

- Reviewer for the International Conference on Machine Learning (ICML), 2021.