





## REFERENCES

- [1] Bowen Baker, Ingmar Kanitscheider, Todor Markov, Yi Wu, Glenn Powell, Bob McGrew, and Igor Mordatch. 2019. Emergent Tool Use From Multi-Agent Autocurricula. (2019). [arXiv:cs.LG/1909.07528](https://arxiv.org/abs/1909.07528)
- [2] Christopher Berner, Greg Brockman, Brooke Chan, Vicki Cheung, Przemyslaw Debiak, Christy Dennison, David Farhi, Quirin Fischer, Shariq Hashme, Chris Hesse, Rafal Józefowicz, Scott Gray, Catherine Olsson, Jakub W. Pachocki, Michael Petrov, Henrique Pond'e de Oliveira Pinto, Jonathan Raiman, Tim Salimans, Jeremy Schlatter, Jonas Schneider, Szymon Sidor, Ilya Sutskever, Jie Tang, Filip Wolski, and Susan Zhang. 2019. Dota 2 with Large Scale Deep Reinforcement Learning. [ArXiv abs/1912.06680](https://arxiv.org/abs/1912.06680) (2019).
- [3] Max Jaderberg, Wojciech M Czarnecki, Iain Dunning, Luke Marris, Guy Lever, Antonio Garcia Castaneda, Charles Beattie, Neil C Rabinowitz, Ari S Morcos, Avraham Ruderman, et al. 2018. Human-level performance in first-person multiplayer games with population-based deep reinforcement learning. [arXiv preprint arXiv:1807.01281](https://arxiv.org/abs/1807.01281) (2018).
- [4] OpenAI. 2018. OpenAI Five. <https://blog.openai.com/openai-five/>. (2018).
- [5] David Silver, Aja Huang, Chris J Maddison, Arthur Guez, Laurent Sifre, George Van Den Driessche, Julian Schrittwieser, Ioannis Antonoglou, Veda Panneershelvam, Marc Lanctot, et al. 2016. Mastering the game of Go with deep neural networks and tree search. *nature* 529, 7587 (2016), 484.
- [6] Joseph Suarez, Yilun Du, Phillip Isola, and Igor Mordatch. 2019. Neural MMO: A Massively Multiagent Game Environment for Training and Evaluating Intelligent Agents. *CoRR* abs/1903.00784 (2019). [arXiv:1903.00784](https://arxiv.org/abs/1903.00784) <http://arxiv.org/abs/1903.00784>
- [7] Oriol Vinyals, Igor Babuschkin, Junyoung Chung, Michael Mathieu, Max Jaderberg, Wojtek Czarnecki, Andrew Dudzik, Aja Huang, Petko Georgiev, Richard Powell, Timo Ewalds, Dan Horgan, Manuel Kroiss, Ivo Danihelka, John Agapiou, Junhyuk Oh, Valentin Dalibard, David Choi, Laurent Sifre, Yury Sulsky, Sasha Vezhnevets, James Molloy, Trevor Cai, David Budden, Tom Paine, Caglar Gulcehre, Ziyu Wang, Tobias Pfaff, Toby Pohlen, Dani Yogatama, Julia Cohen, Katrina McKinney, Oliver Smith, Tom Schaul, Timothy Lillicrap, Chris Apps, Koray Kavukcuoglu, Demis Hassabis, and David Silver. 2019. AlphaStar: Mastering the Real-Time Strategy Game StarCraft II. <https://deepmind.com/blog/alphastar-mastering-real-time-strategy-game-starcraft-ii/>. (2019).