

## References

- [1] F. Ruess, J. Schaenzlin, and H. Benaroya, "Structural Design of a Lunar Habitat," p. 25.
- [2] H. Bier, H. Vermeer, A. Hidding, K. Jani, and T. Delft, "Design-to-Robotic-Production of Underground Habitats on Mars," p. 8.
- [3] A. R. Cheraghi, S. Shahzad, and K. Graffi, "Past, Present, and Future of Swarm Robotics," *arXiv:2101.00671 [cs]*, Jan. 2021, Accessed: Jun. 26, 2021. [Online]. Available: <http://arxiv.org/abs/2101.00671>
- [4] G. Beni, "From Swarm Intelligence to Swarm Robotics," in *Swarm Robotics*, vol. 3342, E. Şahin and W. M. Spears, Eds. Berlin, Heidelberg: Springer Berlin Heidelberg, 2005, pp. 1–9. doi: 10.1007/978-3-540-30552-1\_1.
- [5] G. Beni, "The concept of cellular robotic system," in *Proceedings IEEE International Symposium on Intelligent Control 1988*, Arlington, VA, USA, 1989, pp. 57–62. doi: 10.1109/ISIC.1988.65405.
- [6] T. Fukuda and S. Nakagawa, "Approach to the dynamically reconfigurable robotic system," *J Intell Robot Syst*, vol. 1, no. 1, pp. 55–72, 1988, doi: 10.1007/BF00437320.
- [7] G. Dudek, M. Jenkin, E. Milios, and D. Wilkes, "A taxonomy for swarm robots," in *Proceedings of 1993 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS '93)*, Yokohama, Japan, 1993, vol. 1, pp. 441–447. doi: 10.1109/IROS.1993.583135.
- [8] B. Webb, "Swarm Intelligence: From Natural to Artificial Systems," *Connection Science*, vol. 14, no. 2, pp. 163–164, Jun. 2002, doi: 10.1080/09540090210144948.
- [9] J. Chappell, "Book review: Bio-Inspired Artificial Intelligence: Theories, Methods, and Technologies," *Am. J. Hum. Biol.*, vol. 21, no. 5, pp. 713–714, Sep. 2009, doi: 10.1002/ajhb.20948.
- [10] J. Werfel, "Collective Construction with Robot Swarms," in *Morphogenetic Engineering*, R. Doursat, H. Sayama, and O. Michel, Eds. Berlin, Heidelberg: Springer Berlin Heidelberg, 2012, pp. 115–140. doi: 10.1007/978-3-642-33902-8\_5.
- [11] G. Theraulaz and E. Bonabeau, "Coordination in Distributed Building," *Science*, vol. 269, no. 5224, pp. 686–688, Aug. 1995, doi: 10.1126/science.269.5224.686.
- [12] R. L. Stewart and R. A. Russell, "A Distributed Feedback Mechanism to Regulate Wall Construction by a Robotic Swarm," *Adaptive Behavior*, vol. 14, no. 1, pp. 21–51, Mar. 2006, doi: 10.1177/105971230601400104.
- [13] C. A. C. Parker, Hong Zhang, and C. R. Kube, "Blind bulldozing: multiple robot nest construction," in *Proceedings 2003 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2003) (Cat. No.03CH37453)*, Las Vegas, NV, USA, 2003, vol. 2, pp. 2010–2015. doi: 10.1109/IROS.2003.1248950.
- [14] S. Garnier, J. Gautrais, and G. Theraulaz, "The biological principles of swarm intelligence," *Swarm Intell*, vol. 1, no. 1, pp. 3–31, Oct. 2007, doi: 10.1007/s11721-007-0004-y.
- [15] de la Croix, Jean-Pierre and Egerstedt, Magnus B., "Controllability Characterizations of Leader-Based Swarm Interactions," *AAAI Fall Symposium: Human Control of Bioinspired Swarms*, Nov. 2012, [Online]. Available: <http://hdl.handle.net/1853/46177>
- [16] J. Werfel, Y. Bar-Yam, and R. Nagpal, "Construction by Robot Swarms Using Extended Stigmergy," p. 19.
- [17] J. Werfel, Y. Bar-Yam, and R. Nagpal, "Building Patterned Structures with Robot Swarms," p. 8.

- [18] G. Theraulaz and E. Bonabeau, "Modelling the Collective Building of Complex Architectures in Social Insects with Lattice Swarms," *Journal of Theoretical Biology*, vol. 177, no. 4, pp. 381–400, Dec. 1995, doi: 10.1006/jtbi.1995.0255.
- [19] J. Pollack, M. A. Bedau, P. Husbands, R. A. Watson, and T. Ikegami, Eds., *Artificial Life IX: Proceedings of the Ninth International Conference on the Simulation and Synthesis of Living Systems*. The MIT Press, 2004. doi: 10.7551/mitpress/1429.001.0001.
- [20] J. Werfel, K. Petersen, and R. Nagpal, "Designing Collective Behavior in a Termite-Inspired Robot Construction Team," *Science*, vol. 343, no. 6172, pp. 754–758, Feb. 2014, doi: 10.1126/science.1245842.
- [21] Gebhardt, Gregor H.W. and Neumann, Gerhard, "The Kilobot Gym," *ICRA 2018 Workshop*, 2018.
- [22] M. Rubenstein, C. Ahler, N. Hoff, A. Cabrera, and R. Nagpal, "Kilobot: A low cost robot with scalable operations designed for collective behaviors," *Robotics and Autonomous Systems*, vol. 62, no. 7, pp. 966–975, Jul. 2014, doi: 10.1016/j.robot.2013.08.006.
- [23] T. Liyanage and S. Fernando, "Optimizing Robotic Swarm Based Construction Tasks," p. 4.
- [24] C. A. Rouff, M. G. Hinchey, W. F. Truskowski, and J. L. Rash, "Experiences applying formal approaches in the development of swarm-based space exploration systems," *Int J Softw Tools Technol Transfer*, vol. 8, no. 6, pp. 587–603, Oct. 2006, doi: 10.1007/s10009-006-0027-5.
- [25] J. Thangavelautham, K. Law, T. Fu, N. Abu El Samid, A. D. S. Smith, and G. M. T. D'Eleuterio, "Autonomous multirobot excavation for lunar applications," *Robotica*, vol. 35, no. 12, pp. 2330–2362, Dec. 2017, doi: 10.1017/S0263574717000017.
- [26] S. Wilkinson, J. Musil, J. Dierckx, I. Gallou, and X. de Kestelier, "Autonomous Additive Construction on Mars," p. 12.
- [27] J. Irawan, X. De Kestelier, N. Argyros, B. Lewis, and S. Gregson, "A Reconfigurable Modular Swarm Robotic System for ISRU (In-Situ Resource Utilisation) Autonomous 3D Printing in Extreme Environments," in *Impact: Design With All Senses*, C. Gengnagel, O. Baverel, J. Burry, M. Ramsgaard Thomsen, and S. Weinzierl, Eds. Cham: Springer International Publishing, 2020, pp. 685–698. doi: 10.1007/978-3-030-29829-6\_53.
- [28] B. Khoshnevis, X. Yuan, B. Zahiri, J. Zhang, and B. Xia, "Construction by Contour Crafting using sulfur concrete with planetary applications," *RPJ*, vol. 22, no. 5, pp. 848–856, Aug. 2016, doi: 10.1108/RPJ-11-2015-0165.
- [29] G. H. Just, K. Smith, K. H. Joy, and M. J. Roy, "Parametric review of existing regolith excavation techniques for lunar In Situ Resource Utilisation (ISRU) and recommendations for future excavation experiments," *Planetary and Space Science*, vol. 180, p. 104746, Jan. 2020, doi: 10.1016/j.pss.2019.104746.
- [30] D. Miner, "Swarm Robotics Algorithms: A Survey," p. 15.
- [31] "Ursina Engine." <https://www.ursinaengine.org/> (accessed Jul. 17, 2022).
- [32] "Python UI | Design GUI with Python | Python Bindings for Qt." <https://www.qt.io/qt-for-python> (accessed Jul. 17, 2022).
- [33] F. Rossi, S. Bandyopadhyay, M. Wolf, and M. Pavone, "Review of Multi-Agent Algorithms for Collective Behavior: a Structural Taxonomy," *IFAC-PapersOnLine*, vol. 51, no. 12, p. 112–117, 2018.
- [34] D. A. Feshbach and C. Sung, "Reconfiguring Non-Convex Holes in Pivoting Modular Cube Robots," *IEEE Robot. Autom. Lett.*, vol. 6, no. 4, pp. 6701–6708, Oct. 2021, doi: 10.1109/LRA.2021.3095030.