

REFERENCES

- [1] R. Fremdling, “Industrial revolution and scientific and technological progress,” *Jahrb. für Wirtschaftsgeschichte/Economic Hist. Yearb.*, vol. 38, no. 2, pp. 147–168, 1997.
- [2] S. Canright, “Who invented the aeroplane,” 2007. [Online]. Available: https://www.nasa.gov/audience/forstudents/k-4/home/F_Who_Invented_Aeroplane.html.
- [3] O. Gur, M. Bhatia, J. Schetz, W. Mason, R. Kapania, and D. Mavris, “Multidisciplinary design optimization of a truss braced wing aircraft,” in *9th AIAA Aviation Technology, Integration, and Operations Conference (ATIO) and Aircraft Noise and Emissions Reduction Symposium (ANERS)*, 2009, p. 7114.
- [4] D. R. Jenkins, *X-15: Extending the frontiers of flight*. 2007.
- [5] A. Marrone and M. Nones, “The role of dual-use helicopters in the security.”
- [6] N. Wijayathunga, T. D. Lalitharatne, D. S. Chathuranga, and B. Jayasekara, “Development of a robotic manipulator to be used in multicopter aerial vehicle,” in *2019 Moratuwa Engineering Research Conference (MERCOn)*, 2019, pp. 638–643.
- [7] A. B. Kisabo, C. A. Osheku, and S. O. Samuel, “Conceptual design, analysis and construction of a fixed-wing unmanned aerial vehicle for oil and gas pipeline surveillance,” *J. Aircr. Spacecr. Technol.*, vol. 1, no. 1, pp. 18–29, 2017.
- [8] C. Rotaru and M. Todorov, “Helicopter flight physics,” *Flight Physics-Models, Tech. Technol. DOI*, vol. 10, pp. 19–48, 2017.
- [9] K. M. Thu and A. I. Gavrilov, “Designing and modeling of quadcopter control system using L1 adaptive control,” *Procedia Comput. Sci.*, vol. 103, pp. 528–535, 2017.

- [10] C. C. Hwang, P. L. Li, C. T. Liu, and C. Chen, "Design and analysis of a brushless DC motor for applications in robotics," *IET Electr. power Appl.*, vol. 6, no. 7, pp. 385–389, 2012.
- [11] M. Isato, K. Sawa, and T. Ueno, "Commutation phenomena and brush wear of DC motor at high speed rotation," *IEICE Trans. Electron.*, vol. 100, no. 9, pp. 716–722, 2017.
- [12] J. Winslow, M. Benedict, V. Hrishikeshavan, and I. Chopra, "Design, development, and flight testing of a high endurance micro quadrotor helicopter," *Int. J. Micro Air Veh.*, vol. 8, no. 3, pp. 155–169, 2016.
- [13] M. Šustek and Z. Úvredn\`iček, "The basics of quadcopter anatomy," in *MATEC Web of Conferences*, 2018, vol. 210, p. 1001.
- [14] B. Galkin, J. Kibilda, and L. A. DaSilva, "UAVs as mobile infrastructure: Addressing battery lifetime," *IEEE Commun. Mag.*, 2019.
- [15] Z. Pandilov and V. Dukovski, "Comparison of the characteristics between serial and parallel robots," *Acta Tech. Corvininesis-Bulletin Eng.*, vol. 7, no. 1, 2014.
- [16] E. Ottaviano, M. Ceccarelli, and M. Husty, "Workspace topologies of industrial 3R manipulators," *Int. J. Adv. Robot. Syst.*, vol. 4, no. 3, p. 38, 2007.
- [17] S. A. Ajwad, J. Iqbal, M. I. Ullah, and A. Mehmood, "A systematic review of current and emergent manipulator control approaches," *Front. Mech. Eng.*, vol. 10, no. 2, pp. 198–210, 2015.
- [18] N. Wijayathunga, T. D. Lalitharatne, D. S. Chathuranga, and B. Jayasekara, "Multicopter top mounted novel robotic manipulator with a disturbance compensation mechanism."
- [19] D. Xilun, G. U. O. Pin, X. U. Kun, and Y. U. Yushu, "A review of aerial manipulation of small-scale rotorcraft unmanned robotic systems," *Chinese J. Aeronaut.*, vol. 32, no. 1, pp. 200–214, 2019.

- [20] J. Braga, G. Heredia, and A. Ollero, “Aerial manipulator for structure inspection by contact from the underside,” *2015 IEEE/RSJ Int. Conf. Intell. Robot. Syst.*, pp. 1879–1884, 2015.
- [21] X. Meng, Y. He, and J. Han, “Survey on aerial manipulator: System, modeling, and control,” *Robotica*, pp. 1–30.
- [22] M. Sahi, “New gripper solutions for robotic picking applications.” [Online]. Available: <https://www.tractica.com/robotics/new-gripper-solutions-for-robotic-picking-applications/>.
- [23] D. Mellinger, Q. Lindsey, M. Shomin, and V. Kumar, “Design, modeling, estimation and control for aerial grasping and manipulation,” in *2011 IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2011, pp. 2668–2673.
- [24] C. C. Kessens, M. Horowitz, C. Liu, J. Dotterweich, M. Yim, and H. L. Edge, “Toward lateral aerial grasping & manipulation using scalable suction,” in *2019 International Conference on Robotics and Automation (ICRA)*, 2019, pp. 4181–4186.
- [25] P. E. I. Pounds, D. R. Bersak, and A. M. Dollar, “Grasping from the air: Hovering capture and load stability,” in *2011 IEEE international conference on robotics and automation*, 2011, pp. 2491–2498.
- [26] S. Shimahara, S. Leewiwatwong, R. Ladig, and K. Shimonomura, “Aerial torsional manipulation employing multi-rotor flying robot,” in *2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2016, pp. 1595–1600.
- [27] P. Yu, Z. Wang, and K. C. Wong, “Exploring aerial perching and grasping with dual symmetric manipulators and compliant end-effectors,” *Int. J. Micro Air Veh.*, vol. 11, p. 1756829319877416, 2019.
- [28] M. A. Estrada, S. Mintchev, D. L. Christensen, M. R. Cutkosky, and D. Floreano, “Forceful manipulation with micro air vehicles,” *Sci. Robot.*, vol. 3, no. 23, p. eaau6903, 2018.

- [29] M. T. Pope *et al.*, “A multimodal robot for perching and climbing on vertical outdoor surfaces,” *IEEE Trans. Robot.*, vol. 33, no. 1, pp. 38–48, 2016.
- [30] J. Polin, “Avian-inspired grasping for quadrotor micro UAVs.”
- [31] L. Lin, Y. Yang, H. Cheng, and X. Chen, “Autonomous vision-based aerial grasping for rotorcraft unmanned aerial vehicles,” *Sensors*, vol. 19, no. 15, p. 3410, 2019.
- [32] M. Orsag, C. Korpela, S. Bogdan, and P. Oh, “Valve turning using a dual-arm aerial manipulator,” in *2014 international conference on unmanned aircraft systems (ICUAS)*, 2014, pp. 836–841.
- [33] V. Nayak, C. Papachristos, and K. Alexis, “Design and control of an aerial manipulator for contact-based inspection,” 2018, pp. 1–5.
- [34] F. Ruggiero, M. A. Trujillo, R. Cano, H. Ascorbe, A. Viguria, and C. Per, “A multilayer control for multirotor UAVs equipped with a servo robot arm,” pp. 4014–4020, 2015.
- [35] J.-P. Merlet, C. M. Gosselin, and N. Mouly, “Workspaces of planar parallel manipulators,” *Mech. Mach. Theory*, vol. 33, no. 1–2, pp. 7–20, 1998.
- [36] I. Palunko, R. Fierro, and P. Cruz, “Trajectory generation for swing-free maneuvers of a quadrotor with suspended payload: A dynamic programming approach,” in *2012 IEEE International Conference on Robotics and Automation*, 2012, pp. 2691–2697.
- [37] M. Uavs, S. J. Lee, and H. J. Kim, “Autonomous swing-angle estimation for stable slung-load flight of multi-rotor UAVs,” pp. 4576–4581, 2017.
- [38] H. Nguyen, S. Member, S. Park, and S. Member, “A novel robotic platform for aerial manipulation using quadrotors as rotating thrust generators,” no. June, 2018.
- [39] A. S. Saeed, A. B. Younes, C. Cai, and G. Cai, “A survey of hybrid unmanned

- aerial vehicles,” *Prog. Aerosp. Sci.*, vol. 98, pp. 91–105, 2018.
- [40] P. H. Nguyen, K. W. Kim, Y. W. Lee, and K. R. Park, “Remote marker-based tracking for UAV landing using visible-light camera sensor,” *Sensors*, vol. 17, no. 9, p. 1987, 2017.
- [41] M. Fumagalli, R. Naldi, A. Macchelli, R. Carloni, S. Stramigioli, and L. Marconi, “Modeling and control of a flying robot for contact inspection,” in *2012 IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2012, pp. 3532–3537.
- [42] M. Guo, D. Gu, W. Zha, X. Zhu, and Y. Su, “Controlling a quadrotor carrying a cable-suspended load to pass through a window,” *J. Intell. Robot. Syst.*, pp. 1–15, 2019.
- [43] M. Orsag, C. Korpela, and P. Oh, “Modeling and control of MM-UAV: Mobile manipulating unmanned aerial vehicle,” *J. Intell. Robot. Syst.*, vol. 69, no. 1–4, pp. 227–240, 2013.
- [44] A. Tayebi and S. McGilvray, “Attitude stabilization of a VTOL quadrotor aircraft,” *IEEE Trans. Control Syst. Technol.*, vol. 14, no. 3, pp. 562–571, 2006.
- [45] X. Meng, Y. He, F. Gu, Q. Li, and J. Han, “Dynamics modeling and simulation analysis for rotorcraft aerial manipulator system,” in *2017 36th Chinese Control Conference (CCC)*, 2017, pp. 1156–1161.
- [46] F. Forte, R. Naldi, A. Macchelli, and L. Marconi, “On the control of an aerial manipulator interacting with the environment,” in *2014 IEEE International Conference on Robotics and Automation (ICRA)*, 2014, pp. 4487–4492.
- [47] R. Cano, C. Pérez, F. Pruano, A. Ollero, and G. Heredia, “Mechanical design of a 6-DOF aerial manipulator for assembling bar structures using UAVs,” in *2nd RED-UAS 2013 workshop on research, education and development of unmanned aerial systems*, 2013, vol. 218.
- [48] G. Heredia *et al.*, “Control of a multirotor outdoor aerial manipulator,” *IEEE/RSJ Int. Conf. Intell. Robot. Syst.*, pp. 1–6, 2014.

- [49] X. Meng *et al.*, “Design and implementation of rotor aerial manipulator system,” in *2016 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, 2016, pp. 673–678.
- [50] Q. Quan, *Introduction to multicopter design and control*. Springer, 2017.
- [51] “Drones at Intel.” [Online]. Available: <https://newsroom.intel.com/press-kits/drones-at-intel/#photos>.