Khanh Nguyen (He/Him)

Email: nkhanh1895@gmail.com
LinkedIn: Khanh-Nguyen-11b0a919b
Website: https://imkhanhnguyen.github.io/
Research gate: Khanh-Nguyen-259
Google scholar: Khanh Nguyen

EDUCATION

Ph.D. in Smart Vehicle Engineering (Expected in February 2026)
Konkuk University, Seoul, Republic of Korea
Thesis: *From Wings to Fins: Bioinspired Robotics in Flying and Swimming Systems*
Outcome (as of April 2025): One co-authored paper on a fast-swimming robot (2023). Two first-author papers on flapping-wing stability (2023) and on gliding feasibility of the flying-fish-like robot (2024).
Relevant courses: Robot Kinematics, Numerical Analysis, Optimal Control Theory. (GPA: 4.00/4.00)

M.S. in Smart Vehicle Engineering (February 2021)
Konkuk University, Seoul, Republic of Korea
Thesis: *Investigation of stability and aerodynamic performance of a flapping-wing micro air vehicle in hover using three-dimensional computational fluid dynamics analyses*
Outcome: Two first-author papers on stability and aerodynamic analyses of the flapping-wing robot (2021)
Relevant courses: Finite Element Method, Advanced Finite Element Method, Structural Analysis. (GPA: 3.89/4.00)

B.S. in Mechanical and Aerospace Engineering (August 2018)
Ho Chi Minh City University of Technology, Vietnam
5-year Vietnam-France Excellent Engineer Training Program (PFIEV) is accredited by Engineering Degree Commission (CTI) in France and is eligible for the EUR-ACE (European Accredited Engineer) Masters label, issued by European Network for Accreditation of Engineering Education (ENAEE). Total ECTS: 274.
Thesis: *Computational approach on the aerodynamics of UAV combining fixed wing and three propellers* (graded: 9.07/10)
Outcome: One first-author conference paper (2018)
Relevant courses: Aerodynamics, Aircraft Propulsion, Combustion, Computational Fluid Dynamics, Aircraft Design, Helicopters, Aerospace Materials, Flight Mechanics, Strength of Materials. (GPA: 3.18/4.00)

HONORS AND AWARDS

Doctoral Fellowship, Konkuk University (2022-2026)
Research Assistant Fellowship, Konkuk University (2019-2021)
Research Assistant Fellowship, University of Ulsan, Republic of Korea (2019)
Research Assistant Fellowship, HCMUT (2018)
Best Paper Award, 18th International Conference on Intelligent Unmanned Systems (ICIUS), Japan (2022)
Merit-Based Tuition Scholarship (50%), Konkuk University (2019 – 2021 & 2022-2024)
Merit-Based Tuition Scholarship for Excellent Students (130%), HCMUT (2018)
Merit-Based Tuition Scholarship (100%), HCMUT (2017-2018)

PROFESSIONAL SERVICES

Reviewer, Journal of Aeronautics Astronautics and Aviation
Reviewer, International Journal of Intelligent Unmanned Systems

UNIVERSITY SERVICES

Teaching assistant

Assisted in grading assignments (KU)*: Basics of mechanics* (Fall, 2020), *Finite Element Method* (Spring, 2025).
Facilitated students understanding assignments during lectures (HCMUT): *Fluid Mechanics* (delivered in English, 2018).

Research assistant

Co-supervised two junior students on their capstone projects during Spring & Fall, 2018 (HCMUT).
Aerodynamic analyses of a hybrid design UAV in forward flight using OpenFOAM.
Numerical simulation of a tricopter in a forward flight using virtual blade element theory with OpenFOAM.
Outcome: Two co-authored conference papers (2019 & 2023), and two peer-reviewed journal publications (2020 & 2024).

TECHNICAL SKILLS

Computational Fluid Dynamics & Simulation Tools (ANSYS-Fluent, OpenFOAM, C++).
Image Processing & Visualization (MATLAB, Digitalizing Tool - DLTdv, Pixel-based Locomotion Analysis, Photoshop).

Geometric Design & CAD Tools (SolidWorks, AutoCAD).
Fabrication & Tools (CNC, 3D Printer, Silicone Molding).
Web Development (HTML, CSS).

JOURNAL PUBLICATIONS

1. Le, T.H.H., **Nguyen**, **K.**, Vuong, T.H.N., **2024**, Numerical analysis for aerodynamic characteristics of the unmanned aerial vehicle (UAV) in forward flight. *Journal of Aeronautics, Astronautics and Aviation, 56. 6s, 1081-1097, 2024*. (The second author is the main contributor)
2. **Nguyen**, **K.**, Ha, G.H., Kang, T.S., Park, H.C., **2024**, Dynamic flight stability characteristics of a hovering insect-like flapping-wing robot on Mars. *Aerospace Science and Technology*, 152, 109371.
3. **Nguyen**, **K.**, Park, H.C., **2023**, Feasibility study on mimicking the tail-beating supported gliding flight of flying fish. *Ocean Engineering*, 287, 115745.
4. Pham, T.H., **Nguyen**, **K.**, Park, H.C., **2023**, A robotic fish capable of fast underwater swimming and water leaping with high Froude number. *Ocean Engineering*, 268, 113512.
5. **Nguyen**, **K.**, Au, L.T.K, Phan, H.V, Park, H.C., **2021**, Comparative dynamic flight stability of insect-inspired flapping-wing micro air vehicles in hover: Longitudinal and lateral motions. *Aerospace Science and Technology*, 119, 107085
6. **Nguyen**, **K.**, Au, L.T.K, Phan, H.V, Park, S.H., Park, H.C., **2021**, Effects of wing kinematics, corrugation, and clap-and-fling on aerodynamic efficiency of a hovering insect-inspired flapping-wing micro air vehicle. *Aerospace Science and Technology*, 118, 106990
7. Tran, D.K.K., **Nguyen**, **K.**, Le, T.H.H., Nguyen, N.H., **2020**, Numerical simulation for the forward flight of the tri-copter using virtual blade model. *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences*, 67, 1, 1-32

CONFERENCE PAPERS

1. **Nguyen, K.**, Ha, G.H., Park, H.C., Design and fabrication of high-thrust tail-beating mechanism for fish-inspired swimming robot, Int'l Conf. of Intelligent Unmanned System (ICIUS), Bandung, *Indonesia*, Aug. 20-24, 2024. **(Presenter)**
2. **Nguyen**, **K.**, Park, H.C., Analytical and experimental performance verifications of a fast-swimming robotic fish, Int'l Conf. of Intelligent Unmanned System (ICIUS), Bandung, *Indonesia*, Aug. 20-24, 2024. **(Presenter)**
3. **Nguyen**, **K.**, Kang, T.S., Park, H.C., Hovering characteristics of an insect-like flapping-wing robot on Mars, Proceedings of Korean Society for Aeronautical and Space Sciences (KSAS), *Korea*, Nov. 16, 2023. **(Presenter)**
4. **Nguyen, K.**, Ha, G.H., Park, H.C., Preliminary design of a fish-like fast robot by scaling of the KUFish, Int'l Conf. of Intelligent Unmanned System (ICIUS), Adelaide, *Australia*, July 5-7, 2023.
5. **Nguyen**, **K.**, Park, H.C., Roles of hydrodynamic forces generated by tail-beating motion in gliding flight of flying-fish-mimicking robot, Int'l Conf. of Intelligent Unmanned System (ICIUS), Adelaide, *Australia*, July 5-7, 2023. **(Presenter)**
6. Ha, G.H., **Nguyen, K.**, Park, H.C., Thrust generation by flapping-wings under the low-air density condition, Int'l Conf. of Intelligent Unmanned System (ICIUS), Adelaide, *Australia*, July 5-7, 2023.
7. Le, T.H.H., **Nguyen, K.**, Tran, M.H., Numerical analysis for aerodynamic characteristics of the unmanned aerial vehicle (UAV) in forward flight, Southeast Asia Workshop on Aerospace Engineering (SAWAE), *Thailand*, 2023.
8. **Nguyen, K.,** Pham, T.H., Park, H.C., Numerical investigation of hydrodynamics for a fish-like robot under undulatory forward swimming, Proceedings of the Korean Society of Mechanical Engineers Annual Meeting, Jeju, *Korea*, 2022. **(Presenter)**
9. Ha, G.H., **Nguyen, K.,** Park, H.C., Prediction of flapping wing characteristics in ultra-low air-density condition using a dynamic model, Int'l Conf. of Intelligent Unmanned System (ICIUS), Tokushima, *Japan*, Aug. 9-12, 2022.
10. Pham, T.H., **Nguyen, K.,** Park, H.C., Leaping out of water of the KUFish: Prediction and demonstration, ICIUS, Tokushima, *Japan*, Aug. 9-12, 2022. (Selected best paper award)
11. **Nguyen, K.,** Pham, T.H., Park, H.C., Numerical estimation of hydrodynamic thrust using the measured tail-beating kinematics of a fish-like robot, ICIUS, Tokushima, *Japan*, Aug. 9-12, 2022. **(Presenter)**
12. **Nguyen, K.,** Au, L.T.K., Phan, Hoang Vu and Park, H.C., Wing kinematics modulation in an insect-like tailless flapping wing micro air vehicle (FW-MAV) for higher aerodynamic efficiency, ICIUS, *Vietnam*, Aug. 25-27, 2021. **(Presenter)**
13. Dao, T.T., **Nguyen, K.,** and Park, H.C., CFD and FSI-based parametric study on tail fin for high-speed underwater locomotion, ICIUS, *Vietnam*, Aug. 25-27, 2021.
14. **Nguyen, K.,** Au, L.T.K., and Park, H.C., Three-dimensional wing kinematics for improved aerodynamic performance of insect-like flapping-wing micro air vehicle, KSAS, *Korea*, 2020. **(Presenter)**
15. Au, L.T.K., **Nguyen, K.**, Park, H.C., Effect of wing corrugation on aerodynamic performance in 3D flapping wings, Proceedings of Korean Society for Aeronautical and Space Sciences (KSAS), *Korea*, 2019. **(Presenter)**
16. Tran, D.K.K., **Nguyen**, **K.**, Le, T.H.H., Numerical simulation for the forward flight of the tri-copter using Virtual Blade Model, Southeast Asia workshop on Aerospace Engineering (SAWAE), *Malaysia*, 2019.
17. **Nguyen, K.,** Nguyen, N.H., Le, T.H.H., Numerical approach for the vertical take-off and landing UAVs using the virtual blade model, Southeast Asia workshop on Aerospace Engineering (SAWAE), *Thailand*, 2018. **(Presenter)**