



# Khanh Nguyen (He/Him)

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## EDUCATION

### Doctor's Degree in Smart Vehicle Engineering

(February 2022 - Expected February 2026)

KONKUK UNIVERSITY (KU), Seoul, Republic of Korea

- Thesis: *From Wings to Fins: Bioinspired Robotics in Flying and Swimming Systems*
- Outcome: **01** co-authored journal on a fast-swimming robot (2023); **02** first-author journals on flapping-wing stability (2023) and on gliding feasibility of the flying-fish-like robot (2024).
- Courses: Robot Kinematics, Numerical Analysis, Optimal Control Theory. **GPA: 4.00/4.00**

### Master's Degree in Smart Vehicle Engineering

(February 2019 - February 2021)

KONKUK UNIVERSITY (KU), 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: **02** first-author journals on stability and aerodynamic analyses of the flapping-wing robot (2021)
- Courses: Finite Element Method (FEM), Advanced FEM, Structural Analysis. **GPA: 3.89/4.00**

### Bachelor's Degree in Mechanical and Aerospace Engineering

(September 2013 - August 2018)

HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY (HCMUT), 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 (ENAAEE). Total ECTS: 274.

- Thesis: *Computational approach on the aerodynamics of UAV combining fixed wing and three propellers*. **Graded 9.07/10**
- Outcome: **01** first-author international conference paper (2018)
- Courses: Aerodynamics, Aircraft Propulsion, Combustion, Computational Fluid Dynamics, Aircraft Design, Helicopters, Flight Mechanics, and Strength of Materials. **GPA: 3.18/4.00**

## HONORS AND AWARDS

Doctoral Fellowship, KU, Republic of Korea (2022 – 2026)

Research Assistant Fellowship, KU, Republic of Korea (2019 – 2021)

Research Assistant Fellowship, University of Ulsan, Republic of Korea (2019)

Research Assistant Fellowship, HCMUT, Vietnam (2018 – 2019)

Best Paper Award, 18th International Conference on Intelligent Unmanned Systems (ICIUS), Japan (2022)

Merits for Exceptional Academic Students, KU, Republic of Korea (50%, 2019 – 2021 & 2022 – 2024)

Excellent Student of HCMUT, Vietnam (120% tuition waiver in 2018)

Outstanding Scholar Tuition Grant, HCMUT, Vietnam (100% in 2014 and 110% in 2017)

## 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).

- Project 1: Aerodynamic analyses of a hybrid design UAV in forward flight using OpenFOAM.
- Project 2: 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 publications (2020 & 2024).

## TECHNICAL SKILLS

**Programming Languages:** MATLAB, C++

**Web Development:** HTML, CSS

**Molding Techniques:** Silicone Molding

**Software Tools:** Microsoft Office, Adobe Photoshop

**CNC and 3D Printing Systems:** Mill, Match3Mill, CNC machine, Cubicon, 3D Printer

**Image Processing and Visualization:** Digitalizing Tool - DLTdv, Pixel-based Locomotion Analysis

**CAD and Software Development Tools:** SolidWorks, AutoCAD, Visual Studio, Visual Studio Code

**Computational Fluid Dynamics and Simulation Tools:** ANSYS-Fluent, OpenFOAM

## 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](#). *Aero. Scie. and Tech.*, 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](#). *Aero. Scie. and Tech*, 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](#). *Aero. Scie. and Tech*, 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)**