# XUAN ZHOU

## Ph.D. Candidate

School of Aeronautic Science and Engineering, Beihang University &
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## A.  EDUCATION

| | | |
|---|---|---|
| Politecnico di Milano | Mechincal Engineering | Double Ph.D. Candidate, 2021-Present |
| Beihang University | Flight Vehicle Design | Ph.D. Candidate, 2019-Present |
| Beihang University | Flight Vehicle Design | M.Eng. Candidate, 2017-2019 |
| Beihang University | Aircraft Design and Engineering | B.E., 2013-2017 |

## B.  RESEARCH INTERESTS

- Structural Integrity and Airframe Digital Twin
- Structural Health Monitoring
- Surrogate and Reduced-order Modelling

## C.  PUBLICATIONS & ORAL PRESENTATIONS

### Journal Article

1. Zhao, F., **Zhou, X.**[*], Wang, C., Dong, L.[*], & Atluri, S. N. (2023), Setting Adaptive Inspection Intervals in Helicopter Components, Based on a Digital-Twin. **AIAA Journal**. https://doi.org/10.2514/1.J062222 (Corresponding Author)

2. **Zhou, X.**, Sbarufatti, C.[*], Giglio, M., & Dong, L.[*] (2023), A Fuzzy-set-based Joint Distribution Adaptation Method for Regression and its Application to Online Damage Quantification of a Structural Digital Twin. **Mechanical Systems and Signal Processing**, 191, 110164. https://doi.org/10.1016/j.ymssp.2023.110164

3. **Zhou, X.**, Oboe, D., Poloni, D., Sbarufatti, C.[*], & Dong, L.[*], Giglio, M. (2023). Cluster-based Joint Distribution Adaptation Method for Debonding Quantification in Composite Structures. **AIAA Journal**, 61(2), 831–842. https://doi.org/10.2514/1.J062417

4. He, S., Wang, C., **Zhou, X.**[*], Dong, L.[*], & Atluri, S. N. (2022). Weakly Singular Symmetric Galerkin Boundary Element Method for Fracture Analysis of Three-Dimensional Structures Considering Rotational Inertia and Gravitational Forces. **Computer Modeling in Engineering & Sciences**, 131(3), 1857–1882. https://doi.org/10.32604/cmes.2022.019160 (Corresponding Author)

5. **Zhou, X.**, He, S.[*], Dong, L., & Atluri, S. N. (2022). Real-Time Prediction of Probabilistic Crack Growth with a Helicopter Component Digital Twin. **AIAA Journal**, 60(4), 2555–2567. https://doi.org/10.2514/1.J060890

6. Zhao, F., **Zhou, X.**, & Dong, L. (2021). An Intelligent Digital-Twin-Based Strategy for the Inspection and Repair of Aircraft Skin Cracks. **Chinese Journal of Solid Mechanics**, 42(03), 277–286. https://doi.org/10.19636/j.cnki.cjsm42-1250/o3.2021.030 (in Chinese)

7. Dong, L., **Zhou, X.**, Zhao, F., He, S., Lu, Z., & Feng, J. (2021). Key Technologies for Modeling and Simulation of Airframe Digital Twin. **Acta Aeronautica et Astronautica Sinica**, 42(03), 113-141. https://doi.org/10.7527/S1000-6893.2020.23981 (EI, in Chinese)

### Book Chapter

1. **Zhou, X.**, Dong, L. (2023). Digital Twin driven damage diagnosis and prognosis of complex aircraft structures.

**Handbook of Digital Twins**, CRC Press. (In Press)

## Conference Presentation

1. **Zhou, X.**, Dong, L.[*] (2020), Airframe digital twin case study of a helicopter component, Oral presentation at the 20th National Conference on Fatigue and Fracture (NCFF-20), Chongqing, China.
2. **Zhou, X.**, Dong, L.[*] (2019), Machine Learning based Crack Growth Predictions: Application to a Helicopter Component, Oral presentation at the 6th Asia-Pacific International Conference on Computational Methods in Engineering (ICOME-19), Dalian, China.

## D. CURRICULUM & SKILLS

**Curriculum:** Aircraft Structural Mechanics, Mechanics of Elasticity, Matrix Theory, Methods for Health Monitoring and Prognosis of Engineering Systems Subject to Degradation, Machine Learning, Mathematical Statistics, System Health Monitoring, Computational Method, Mathematical Analysis for Engineering, Theoretical Mechanics, Mechanics of Materials, Aerodynamics.

- **Foreign Language:** English (IELTS: 6.5)
- **Professional Software:** ABAQUS, ANSYS, PATRAN, AutoCAD, SOLIDWORKS, CATIA.
- **Programming and Modeling Languages:** Python, MATLAB, C#, Modelica.

## E. PRACTICAL EXPERIENCE

- Teaching assistant for Aircraft Structural Mechanics for two semesters, School of General Engineering, Beihang University. (2019, 2020)
- Teaching assistant for Mechanics of Materials for one semester, School of Aeronautic Science and Engineering, Beihang University. (2018)
- Volunteer commentator at Beijing Air and Space Museum (2015-2016)
- President of Beihang Military Amateur Association (2015-2016)
- Team Member of the Beihang Aeromodelling Team (2014-2015)

## F. SELECTED AWARDS AND HONORS

- Award from the Academic Excellence Foundation of BUAA for PhD Students (2022)
- Outstanding Graduate of Beihang University (2021, 2022)
- Merit Student of Beihang University (2016,2018,2022)
- Outstanding Graduate from Beihang University (Bachelor, 2017)
- First Prize of China Aeromodelling Design Challenge (2014)