

# Junshi Niu

Mechanical R&D Engineer | Multi-Physical Energy System Modeling

MSc in Energetics & Propulsion at Centrale Nantes

[niujunshi@gmail.com](mailto:niujunshi@gmail.com) | [junshiniu.com](http://junshiniu.com) | [LinkedIn](#) | +33 766763642 | License B



## PROFESSIONAL EXPERIENCE

Research Intern in D2SE Team, LHEEA Lab, CNRS      Centrale Nantes, Nantes, France      Feb 2025 - Aug 2025

- Participated in the TNTM (Transformation Numérique du Transport Maritime) R&D Project led by CMA CGM.
- Research Focus:** Dual Fuel 0D-1D Engine modeling / High Frequency Combustion Modeling / Optimization Algorithm / Turbocharge Model Calibration / Validation of model performance with operational data

### Technical Achievements:

- Advanced Model Validation:** Calibrated and validated the digital models of a dual-fuel marine engine (Amesim) against operational data to accurately estimate energy consumption and power, enhanced the model accuracy and ability.
- Tool Development:** Developed custom Python post-processing tools and compared optimization algorithms, significantly improving computational efficiency and establishing reusable validation workflows.

## EDUCATION

Master of Energetics & Propulsion      Centrale Nantes, Nantes, France      Sep 2023 - Aug 2025

- Coursework:** Combustion, Gas dynamics, Heat Transfer, Turbomachinery, Hybrid Propulsion, Internal Combustion Engines / Propulsion, Fluid Mechanics, Hydrodynamics, Energetics, Mechanical Design / Numerical Methods, Algorithms for Engineering Modeling, Vibrations, Continuum Mechanics
- LAB works:** Engine Simulation / Fluid Mechanics / Heat exchanger / Engine Test Bench / Impulse Turbine
- Project:** Mass transport under waves / Lifting Profiles / Turbulent Flow in Pipes / Decarbonization of marine transportation / Hybrid Powertrain and Energy Management Project

Foundation Master Exchange program      Centrale Nantes, Nantes, France      Sep 2022 - Jun 2023

- Coursework: Energy & Environment, Computer Programming & Data Analysis, Dynamics & Vibrations, Mechanics

Bachelor of Civil Engineering      Jilin University, Changchun, China      Aug 2018 - Jun 2022

- Coursework: Reinforced Concrete Structure, Steel Structures, Structural Mechanics, Mechanics of Materials

Bachelor of Engineering Management (Dual degree)      Jilin University, Changchun, China      Aug 2020 - Jun 2022

- Coursework: Management Science, Project Risk Management, Economics, Project Financing Management

## ACADEMIC EXPERIENCE

Research Assistant in Construction Engineering Lab      Jilin University, Changchun, China      Oct 2020 - Jun 2022

- Experimental study on the permeability of PVA- ECC material and PE- RTII pipe wall adhesion surface.

Student representative, administrative Assistant      Jilin University, Changchun, China      Aug 2019 - Jun 2022

- Responsible for various academic activities and experimental activities of the class; as well as college work plans.

### Short-term Academic Exchanges:

- Macquarie University, Australia (Jan 2019 - Feb 2019) / Hanyang University, Seoul, South Korea (Jun 2019-Aug 2019) / National University of Singapore, Singapore (Oct 2019) / University of Tsukuba, Japan (Dec 2019)
- Oxford University, Oxford, UK (Jan 2020 - Feb 2020): Exchange to Oxford University and awarded “Best Presentation” and “Best Microfilm Award” at the Oxford Prospects Winter Program

### Social Activities:

- 10th University Scholars Leadership Symposium 2019, Kuala Lumpur, Malaysia (Jun 2019)

## PROFESSIONAL SKILLS

### Software Skills:

- Simcenter Amesim, GT Suite**, (Multi-physics simulation: Engines, Piping, Heat transfer, Turbomachinery)
- Computation & Programming: Python, MATLAB** (Numerical analysis and tool development)
- Design (CAD): AutoCAD, SolidWorks / Office Tools: LaTeX, MS Office, Adobe Suite**

### Language:

- English (C1), French (B1), Chinese (Native)**

### Professional Summary:

- Motivated and optimistic research-oriented individual with a strong interest in energy systems and numerical analysis.
- Proven ability to work collaboratively in interdisciplinary teams with high sense of responsibility.

## SCHOLARSHIP & AWARDS

- Academic Work Award Scholarship of Jilin University (2021) / Second Class Scholarship of Jilin University (2022)
- College Excellent Student of Construction Engineering College, Jilin University (2022)
- University Excellent Student Leader of Jilin University (2022) / Outstanding graduate of Jilin University (2022)

## INTERESTS

- Arts & Sports: calligraphy, painting, photography, running, taekwondo, hiking, cycling, kayaking, skiing.