

Kacper Frelek

Date of birth: 11/03/2001 | Nationality: Polish

Aerospace Engineer (M.Sc. Eng.) | Aerodynamics & CFD

Phone: (+48) 798 756 073 **Email:** kacperfrelek@gmail.com **Portfolio:** frelekkacper.com **Location:** Warsaw, Poland

WORK EXPERIENCE

CFD Engineer 01/12/2025 – Current | Warsaw, Poland

Warsaw Institute of Aviation (Space Technology Center)

- Rocket engine CFD simulations: geometry preprocessing, mesh generation, solving, and postprocessing.
- Internal flow guiding control surfaces optimisation for rocket propulsion systems.

Aerodynamics Intern 01/08/2025 – 01/11/2025 | Augsburg, Germany

RFA – Rocket Factory Augsburg

- Executed aerodynamic CFD simulations across preprocessing, meshing, running, and post-processing stages.
- Automated mesh generation, setup workflows, and post-processing pipelines using Python.
- Conducted aerodynamic analyses and validated trends using grid independence checks and monitor-based convergence criteria.

Junior Aeromechanic Engineer 01/06/2023 – 31/07/2025 | Warsaw, Poland

Warsaw Institute of Aviation – Engineering Design Center (EDC)

- Executed aeromechanical analyses using GageMap and Ansys; interpreted obtained computational results.
- Participated in rig test campaigns; analyzed and postprocessed aeromechanical measurement and telemetry data.
- Prepared comprehensive technical documentation for certification reports; worked within international engineering teams.

Analysis Team Member 01/02/2022 – 05/2024 | Warsaw, Poland

Students' Space Association (SKA PW) – Rocketry Division

- Conducted CFD aerodynamic analyses for split canards of the FOK Rocket.
- Performed nose-cone and aerodynamic fin CFD analyses for the GROT sounding rocket.

Engineering Apprentice 01/07/2022 – 31/08/2022 | Warsaw, Poland

The Space Research Centre of the Polish Academy of Sciences (CBK PAN)

- Conducted literature and analytical research required for experimental test setups.
- Modeled structural parts for testing in Siemens NX CAD; drafted detailed engineering manufacturing drawings.

EDUCATION & TRAINING

Master of Science in Aerospace Engineering 31/01/2024 – 10/2026 | Warsaw, Poland

Warsaw University of Technology (Faculty of Power and Aeronautical Engineering – MEiL)

- **Main Thesis:** Validation of Laminar Aeroheating Models for the Mars Science Laboratory Forebody Against T5 Shock-Tunnel Data.
- **Intermediate Project:** Simulation of Reentry Conditions for Starship: A CFD Approach to Aerodynamic Coefficients.

Bachelor of Science in Aerospace Engineering 01/10/2020 – 06/02/2024 | Warsaw, Poland

Warsaw University of Technology (Faculty of Power and Aeronautical Engineering – MEiL)

- **Main Thesis:** Aerodynamic Performance Analysis of Falcon 9 Grid Fins: A Computational Investigation (CFD).
- **Intermediate Project:** Numerical Investigation of Wind Flow Patterns Around Urban Structures.

CFD Project: Impinging Jet CFD Analysis in Ansys CFX 01/10/2023 – 03/2024 | Warsaw, Poland

Framatome

- **Siemens Industry Software:** Certificate of course completion – Fundamental modelling of single 3D objects and assemblies, basics of drafting in the NX system.
- **Warsaw University of Technology (14/09 – 16/09/2022):** Certificate of course completion – Geometry, mesh and introduction to flow analysis based on Ansys programs.

SKILLS, LANGUAGES & INTERESTS

Engineering Software & Tools: Siemens NX, Ansys Fluent, Ansys CFX, Python, Matlab, LaTeX.
Languages: English – **C1**, Polish – **Native**.

Interests: Space Technologies, Aerothermodynamics, Self-development, Travelling.

I hereby consent to the processing of my personal data for the purpose of current and future recruitment processes in accordance with applicable data protection regulations (GDPR).