Mikolaj Dzikowski

Mechanical R&D Engineer (II)

PERSONAL STATEMENT

Leveraging 6 years of comprehensive aircraft design in multinational companies, I blend creative prototyping with rare, exceptionally open interpersonal skills.

Demonstrating my resilience, I am soon launching my 2026 Life project: An **Innovative Hang Glider Startup** after 10 years of private preparations!

Driven by genuine interest and passion for aviation, I will bring my "can-do" attitude to every challenge in our cooperation.

Contact	Location	Linked In	My Business Website (with Portfolio)
(+48) 605 840 888 office@forwingdesign.com	Warsaw, Poland	https://pl.linkedin.com/in/mikolaj-dzikowski-4507a6178	ForWing Design www.forwingdesign.com

EXPERTISE

- Mechanical Design 3D/2D:
  Assemblies, Systems, Support Parts, Tooling
  Structural Hand Calculations
  GD&T
  Rapid Prototyping (3D scanning / 3D printing)
  Planning & Performing Tests
- CAD Proficiency & Flexibility:
  Siemens_NX
  Inventor
  Rhinoceros (& Other CAD Platforms)
- Hands-on Experience with CFD + FEA Analyses:
  OpenFOAM + ANSA / Ansys / Flow5
- Knowledge of Metallic & Composite Materials
  GFRP / CFRP / KFRP / 15CDV6 / 30HGSA / Titanium / Tungsten / EN_AW-7075
- Practical know-how of Manufacturing Methodologies
  i.e. Machining, Welding, Riveting, Lamination

SOFT SKILLS

- **"Can-do" Attitude –** Success oriented approach.
- **Analysis –** Strategic thinking and innovative problem-solving.
- **Interpersonal Skills –** Effective communication, active listening.
- **Leadership –** Time management and team coordination.
- **Continuous Learning –** Keen perception and innate curiosity.
- **Agile Adaptability –** Quick adjustment to new environments.

PASSIONS

- Hang Gliders (design & flying)
- Life Itself

CAREER HISTORY

MECHANICAL R&D ENGINEER (II) (AIRCRAFT DESIGN)
12/2022 – *currently employed*
ATP Aviation in Warsaw, Poland | www.atp-aviation.com | www.at5.pl

Aircraft types:
AT5 – Low wing, single engine, retractable gear, metal & CFRP, 4 person, 950 kg MTOW, EASA CS-23
AT6 – 3 Surface Aircraft, high wing, twin engine, metal & CFRP, retractable gear, 4 person, 1450 kg MTOW, EASA CS-23

Responsibilities:
- **Mechanical Design:** Engineered structural elements, aircraft systems, and test rigs.
- **R&D Supervision:** Oversaw both aircraft & systems assembly, ground tests, managed small prototyping team.
- **Analytical Support:** Performed engineering calculations to facilitate design and ground testing.
- **Component Optimization:** Redesigned existing aircraft parts for improved mass and functionality.
- **Performance Assessment:** Tested designed components / systems for compliance with EASA Part 23 regulations.
- **Technical Documentation:** Prepared detailed reports for aviation authorities (ULC & EASA).
- **Supplier Relations:** Negotiated contracts and collaborated with suppliers and subcontractors.

Notable Achievements:
- **Innovative Design:** Successfully developed components and systems for AT5 and AT6 aircraft prototypes.
- **Cost Savings:** Secured €25,000 (net) savings by optimizing GVT & Resonance Tests provider selection.
- **Strategic Partnership:** Negotiated a key agreement with my previous employer: EVEKTOR, enhancing project funding timelines and reducing expenses.
- **Operational Improvement:** Eliminated CAD system delays in workshop facility.

AVIATION AERODYNAMICIST, CFD ENGINEER
02/2022 – 12/2022
EVEKTOR in Kunovice, Czech Republic | www.evektor.com

Aircraft type:
VUT100 COBRA – Low wing, single engine (*315HP Lycoming*), retractable gear, metal structure, 5 person, EASA CS-23

Responsibilities:
- **Aerodynamic Design:** Verified initial shape definition and sizing of aircraft from 1st design phase.
- **CFD simulations:** Pre-processed 3D models for CFD and completed multiple simulations of aircraft and it's parts.
- **Analytical Support**: Created Excel spreadsheets for flight mechanics calculations, basing on USAF DATCOM, ESDU, scientific books/research and in-house written programs using the Weissinger-L method / LLT.
- **R&D:** Conducted 3-month analysis of potential solutions to the aircraft's stability problem in sideslip.
- **Technical Documentation:** Prepared detailed reports for aviation authorities (EASA).

Notable Achievements:
- **Solved Stability Problem**: Developed specialized, aileron vortex generators that compensated for aircraft lack of stability in sideslip. The specific shape and dimensions were researched and optimized for maximum pressure generation on the ailerons while deflected, helping the aircraft in return to stable flight.
- **Validated Aerodynamic Project:** Recalculated flight mechanics of the initial aerodynamic shape, validated and optimized the data used in further design. Signed the official Aerodynamic Design Documents for EASA certification.

R&D DESIGN ENGINEER, TECHNOLOGIST
04/2021 – 02/2022
Shark Aero in Senica, Slovakia | www.shark.aero

Aircraft type:
SHARK – Low wing, single engine, retractable metal landing gear, CFRP aircraft structure, 2 seater, 600kg MTOW, UL600

Responsibilities:
- **Multinational team management:** Coordinated Slovak and Chinese workers teams as a part of technology transfer.
- **Quality Control:** Validated CFRP parts production and assembly.
- **Technological R&D:** Developed and tested new production methods.
- **Mechanical R&D:** Designed and manufactured test rigs for Shark hybrid VTOL project. Tested the thrust of CFRP in-house designed propellers in a counter-rotating configuration, powered by electric engines.
- **Static Tests:** Assisted with static structure tests for UL600 certification (Ultralight aircraft up to 600 kg MTOW).
- **Technical Documentation:** Prepared detailed reports for aviation authorities (Czech LAA).

Notable Achievements:
- **Production Mastery:** Personally executed and documented every operation in the CFRP glueing department over three months, creating instructional videos for technology transfer to China.
- **Innovative Design:** Enhanced half-product gluing processes by introducing 3D-printed prototype jigs and forms.

CFD & CAD ENGINEER
01/2021 – 04/2021
Self Employed in Warsaw, Poland

Aircraft type:
MEDI UAV – Fixed flying wing, VTOL configuration, CFRP structure, intended for medical transport, 8 kg MTOW

Responsibilities:
- **Aerodynamic R&D:** Verified the aircraft wing shape, optimized it's lift distribution for greatest flying regime.
- **Mechanical R&D:** Redesigned the flying wing structure, and CFRP molds. Assisted with production of a prototype.

AIRCRAFT DESIGN ENGINEER
09/2020 – 01/2021
Argo Aero in Warsaw, Poland | www.argo.aero

Aircraft type:
ARGON 915iS – Experimental Gyroplane, CFRP monocoque structure, single engine, 2 seater, 450 kg MTOW,

Responsibilities:
- **Mechanical Design:** Engineered metal and composite components for diverse aircraft systems.
- **Component Optimization:** Redefined aircraft parts to enhance performance and reduce weight.
- **Technological R&D:** Improved molds for CFRP manufacturing, designed precision measurement tools.
- **Technical Documentation:** Authored assembly and operational manuals in English for international clients.

Notable Achievements:
- **Innovative Design:** Successfully launched a new CFRP avionics panel, receiving client's and company's appreciation for its modern and ergonomic aesthetics.

ENGINEERING INTERN

APPRENTICESHIP

07/2014 – 08/2014

Halton GmbH in Reit im Winkl, Germany | www.halton.com

Responsibilities:

- **Reading 2D documentation:** sheet metal drawings / machine blueprints
- **Use of machines:** lathe / bending press / MIG & MMA welders / cutters / drillers / riveting machines
- **Assembling:** mechanical Robot arm, ventilation systems, air conditioning ducts, sheet metal sub-parts

EDUCATION

2018 –2020 **M.Sc. in Aerospace Engineering, Rzeszów University of Technology, Poland**
With Major in Aircraft Design
Thesis subject: "*Aerodynamic Project of a Hang Glider*"

2019 – 2020 **Student exchange:** Mechanical Engineering, Huazhong University of Science and Tech., **China**
Experienced: Mechanical Engineering in *Chinese University, Travelling, Working as an English Teacher*

2019 – 2019 **Student exchange:** Aeronautics and Aerospace, Technical University of Munich, **Germany**
Experienced: *Helicopter Aerodynamics – Advanced Topics, Science of Science Fiction*

2018 – 2018 **Student exchange:** Mechanical Engineering, University of Aveiro, **Portugal**
Experienced: *Repairing machines, Learning about Portuguese culture*

2014 – 2018 **B.Sc. in Aerospace Engineering, Rzeszów University of Technology, Poland**
Awarded for a most original design in Red Bull Gravity Challenge: *Maple-seed-shaped parachute device*
Thesis subject: "*Aspect Ratio and Reynolds Number impact on the performance of the glider model*"

LANGUAGES

Polish:	English:	Slovak:	Czech:	German:
Native	Fluent **C1** (**TOEIC** Certificate)	Communicative **B1/ B2**	Communicative **B1/ B2**	Intermediate **A2/B1**

PRIVATELY FUNDED COURSES

- **Project Management** Essentials Cert. *issued by MSI: Management & Strategy Institute in 2024*
- **Siemens NX CAD** Certificate *issued by EMT-Systems Sp. z o.o. in 2022*
- Advanced Introduction to **OpenFOAM** *issued by Wroclaw Polytechnic in 2021*
- **OpenFOAM** Workshop - Aerospace & Defense *issued by Paanduv Applications in 2021*
- **TOEIC** Listening & Reading **– English C1** Certificate *issued by Educational Testing Service Global B.V. in 2016*

Thank you for your time and interest to consider my application;

I am eager to leverage my proven expertise to drive success and innovation within your team.

I would also be delighted to share my recommendation letters and my Portfolio with you!

Both are available at my website: ForWing Design ▪ www.forwingdesign.com ▪ www.forwingdesign.com/projects

RODO:

„I agree to the processing of personal data provided in this document for realizing the recruitment process pursuant to the Personal Data Protection Act of 10 May 2018 (Journal o Laws 2018, item 1000) and in agreement with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)."