Stefan-Aleksandar Kyumyurdzhiev

Junior Aerospace Engineer | Propulsion & Defence R&D – Prototyping, Embedded Systems, Mechanical Design
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EU citizen | Available now: full-time or part-time | Open to relocation and remote work

SUMMARY

Aerospace engineer with hands-on experience in solid rocket propulsion, defence prototyping, mechanical R&D design and A320 line maintenance. Lead a 7-person propulsion team; won 1st place at EDTH Sofia 2026 with a high-altitude reconnaissance prototype. Third-year student at TU Sofia. Seeking a Propulsion Engineer, Aerospace Engineer or Defence R&D Engineer role.

SKILLS

Propulsion & Analysis: solid rocket motor design, internal ballistics (OpenMotor), thick-wall pressure vessel stress, MATLAB, Simulink, numerical methods, engineering data analysis, ANSYS Finite Element Analysis (FEA) – course in progress

Prototyping & Embedded: ESP32, C/C++, Python, sensor and hardware-software integration, computer vision, Git / GitHub

CAD & Design: SolidWorks (parts, assemblies, drawings), technical drawings, GD&T / tolerancing, design for manufacturing (DFM)

Test & Practice: LabVIEW, data acquisition, root cause analysis, risk assessment, technical documentation, Excel

Soft Skills: Leadership, teamwork, communication, problem-solving, mentoring, time management, attention to detail

EXPERIENCE

Propulsion Team Lead Mar 2026 – Present

SCAE Student Rocket Club | *Sofia, Bulgaria*

- Lead a 7-person team that designs and builds the club's solid rocket motors; coordinate with aerostructures and avionics.
- Designed the D-1 solid rocket motor (KNDX, BATES grain, G-class, ~113 N·s, ~200 m apogee target) in OpenMotor and SolidWorks; authored its 41-page design package including assembly drawings.
- Built a solid rocket motor design web app (React / TypeScript, AI-assisted): derived and verified internal ballistics and casing stress models against published data; 335 automated tests; live at srm-calculator.vercel.app
- Reviewed teammates' designs (J-class 958 N·s motor, Simulink 6-DOF flight simulation); mentor new members.
- Wrote 2+ safety protocols and risk assessments; manage budget and procurement; lead preparation for the first static fire test.

Mechanical Engineering Intern (R&D) Aug 2026 – Nov 2026

Mator Bulgaria | *Sofia, Bulgaria*

- Produced the full manufacturing package for a hammer mill: 20+ toleranced part and assembly drawings, ready for fabrication.
- Designed a root-extraction machine in CAD (3D parts and assemblies) and helped assemble it in the workshop.
- Designed, drew and manufactured 20+ small parts for in-house use and insulators for customers' machines, applying DFM.

Aircraft Engineer Mar 2026 – Jul 2026

European Air Charter | *Sofia, Bulgaria*

- Performed line maintenance on Airbus A320-family aircraft (CFM56, IAE V2500) in a safety-critical, procedure-driven environment.
- Troubleshot complex defects with senior engineers using AMM and IPC, applying root cause analysis; supported AOG recovery.
- Worked on 4+ aircraft maintenance checks, including structural inspections and repairs (corrosion, skin repairs, fasteners).

DEFENCE R&D PROJECT

High-Altitude Balloon Reconnaissance System Oct 2026

1st Place, European Defense Tech Hackathon (EDTH) Sofia | *3rd Place, Regional Defence & Security Summit (Capital)*

- Co-developed, in a six-person team, a proof of concept for a balloon-borne reconnaissance sensor pod at 15–20 km altitude.
- Owned the communications concept (image and sensor downlink from ~20 km); researched trajectory prediction and tracking.
- Built the electrical side: ESP32 firmware (C/C++), sensor wiring and hardware-software integration into a working demo.
- Developed the demo web simulation with automatic vehicle detection (Python); set up the Git / GitHub repository.

EDUCATION

Bachelor's Degree in Aerospace Engineering 2024 – 2028 (expected)

Technical University of Sofia | *Sofia, Bulgaria* | *English-taught program*

- Coursework: Thermodynamics, Fluid Mechanics, Aerospace Materials & Structures, Signals & Systems, Statics & Dynamics, Space Flight Dynamics (in progress: satellite GNC in MATLAB); LabVIEW data acquisition labs.

EXTRACURRICULAR ACTIVITIES

Short-Track Speed Skater – Bulgarian National Team 2022 – 2026

Bulgarian Skating Federation | *Sofia, Bulgaria* | *Competing since 2011*

- Won multiple Bulgarian titles; placed 6th at European and Junior World Championships; captained the relay team.

CERTIFICATIONS

MATLAB Onramp – MathWorks | Simulink Onramp – MathWorks

LANGUAGES

Bulgarian (Native) | English (C1, IELTS 7.0) | Russian (Basic)