

BlueSpark — Bringing Robotics to the Next Generation

KN SPA i BLSPS
University of Warsaw &
Warsaw University of Technology
Season 01 · 2025-2026

BlueSpark is a student robotics team bridging two Warsaw universities. From our first season, we have treated outreach not as an obligation but as a core part of the project — demonstrating that autonomous underwater systems, AI, and hardware engineering are tangible, learnable, and exciting for students of all levels.

01 Public Events & Demonstrations

SEP 2025 · KATOWICE

New Mobility Congress

Our public debut. We exhibited the BlueSpark prototype — 8-thruster frame, ROS 2 stack, Jetson Orin — to an audience of industry professionals, startups and research institutions, sparking conversations about real-world AUV applications in infrastructure inspection and marine mapping.

OCT 2025 · WARSAW

Researchers' Night — Łukasiewicz Aviation Institute

We hosted a demonstration stand at this major open-science event, showcasing pool-test footage and fielding live questions from students, engineers and curious members of the public. The event directly led to new team members joining from Warsaw University of Technology.

OCT 2025 · WARSAW

NASA Space Apps Challenge

Team members competed in this 48-hour global hackathon, applying experience gained from BlueSpark to build an ocean-monitoring concept. Participation reinforced the interdisciplinary mindset at the heart of the team.

OCT 2025 · WARSAW

ESA Astronaut Visit — Sławosz Uznański-Wiśniewski

We presented the BlueSpark prototype to Sławosz Uznański-Wiśniewski, Polish ESA astronaut and member of the Axiom Space AX-4 mission. A direct dialogue between a student team and an active space-mission professional — a powerful signal to the team of what is achievable.

02 High-School Workshop Programme

In the current season BlueSpark members are delivering a series of hands-on workshops at secondary schools in Warsaw. Each session is designed around a complete engineering loop — from concept to finished artifact — so students experience the full process, not just isolated theory.

Robotics & Electronics: Build a Gripper

Students solder their own analog PWM controller, assemble a 3D-printed robotic gripper, and run a dexterity challenge — transferring objects without dropping or crushing them. Covers servo theory, circuit reading, and hands-on troubleshooting. (~3.5–4 hrs)

AI Vision: Control a Game with Your Body

Using Raspberry Pi + Hailo accelerator, students run YOLO pose-estimation, write their first Python conditionals, and build a touchless Flappy Bird controller that responds to body movement. Introduces computer vision, edge AI, and basic programming. (~3 hrs)

3D Design & Printing: Your First Product

Students model a personalised keychain in Onshape (browser-based CAD), learn slicing fundamentals, and leave with a physical print of their own design. Covers additive manufacturing, tolerances, and the design-to-production pipeline. (~2–3 hrs)

03 Reach & Impact

4

Public events & demonstrations

3

Distinct workshop formats delivered

3

STEM disciplines covered per session (hardware, software, design)

100%

Students leave with a physical artifact they built themselves

04 Our Approach

Every activity we run shares a common structure: a real engineering problem, a complete loop from idea to outcome, and a tangible result the participant takes home. We believe the most effective way to inspire the next generation of engineers is to let them finish something — a soldered board that moves a robot, a Python script that plays a game, a 3D file that becomes a physical object. BlueSpark exists at the intersection of research and education, and we carry that mission into every school visit, public stand, and hackathon we attend.