



Pavel Petráček

PhD in Autonomous Robotics

Robotics R&D Lead @ Fly4Future
Researcher @ Multi-Robot Systems

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- 📘 Link to academic CV
- GOOGLE Scholar

About me

Robotics R&D engineer and team lead with 10 years of hands-on experience in autonomous UAV systems, multi-robot coordination, and robotics for real-world applications. Experienced in taking research from concept to deployment in high-impact environments like subterranean S&R and heritage preservation. Technical expert with strong academic background and project leadership.

Fast learner open to new things.

Core skills

GNSS-denied robot autonomy
SLAM, 3D mapping, perception
Embedded systems, sensor fusion
Real-time system integration

- C++, Python, ROS, PX4, git

 Multi-agent systems
Technical and R&D leadership

Languages

Czech (native)
English (fluent)

Experience

Fly4Future s.r.o.

2023–Present

R&D Projects Lead & Hands-On Developer

- Leading robotics R&D team of 6, moving autonomy to real-world
- Delivering autonomous drones to clients worldwide

Multi-Robot Systems @ CTU

2016–Present

Researcher & Developer

- Fundamental research and its transfer to practice
- Technical solutions, projects leadership, students mentoring, international cooperation, public demos, public speaking, teaching
- Open-source contributor to **MRS UAV System**

CertiCon a.s.

2016–2017

Software Tester in corporate structure

Selected projects

DARPA Subterranean Challenge ([link](#))

- Subterranean search & rescue with autonomous robot teams
- Responsible for system design, GNSS-denied autonomy, mapping, SLAM, experimentation, integration, and deployment of UAVs
- Winning \$1M while competing with **top world institutions**

Dronument ([video](#))

- Documenting interiors of historical monuments with multiple co-operating UAVs in a synchronized multi-robot formation
- Achieved reliable operation and deployed the autonomous system in 20+ historical sites (incl. 2 UNESCO sites)

Multi-UAV swarming ([video](#))

- Deployed first fully-decentralized swarms w/o communication

DOFEC ([video](#))

- Designed onboard fire detection & localization with autonomous mission execution and fire extinguishment

Education

PhD, Autonomous Flying Robotics

CTU, 2019-2024

- Topic: UAV autonomy in perception-degraded settings ([pdf](#))
- Numbers: 19 publications; h-index 9 (WoS), 15 (GScholar)

BSc & MSc, Cybernetics

CTU, 2014-2019

Honors & Awards

Werner von Siemens prize ([web](#), [video](#))

2025

#1 dissertation out of top (243) 2023-2024 STEM works in Czechia

Joseph Fourier prize ([web](#) in Czech)

2025

#1 dissertation out of top (65) 2024 CS works in Czechia

Best paper award at IEEE RA-M ([web](#), [paper](#))

2025

Robotics & Automation Magazine award for our **Dronument** work

AI Awards ([web](#) + [our tech](#) in the EU annual report)

2025

Team award for contributions in Czech AI R&D

Dean's prize ([link](#))

2024, 2019, 2017

All my theses (dissertation, master's & bachelor's) were selected in top 1% works at FEE CTU in their respective category and year

Czech National Excellence Award M17+

2022

Excellent international evaluation of our Dronument solution ([link](#))