



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 & Developer

Leading robotics R&D team of 6 in solving real-world challenges
Hands-on approach to development and experimentation

Multi-Robot Systems @ CTU

2016–Present

Researcher & Developer

Fundamental research and its transfer to practice
Projects leadership, students mentoring, international cooperation, public demos, teaching
Open-source contributor ([MRS UAV System](#))

CertiCon a.s.

2016–2017

Software Tester

Learned corporate workflows & developed automated tests

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 Caltech, MIT, ETH Zürich, ...

Dronument ([video](#))

Documenting interiors of historical monuments with an autonomous multi-UAV team
Achieved reliable operation and deployed the autonomous system in 20 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 price ([video](#))

2025

#1 dissertation out of 243 Czech STEM works in 2023-2024

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

2025

Robotics & Automation Magazine award for our [Dronument](#) work

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

2024

My dissertation selected in top 2 works at FEE CTU that year

Czech National Excellence Award M17+

2022

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

Dean's price

2017, 2019

BSc and MSc theses selected in top 1% at FEE CTU