Pavel Petráček

PhD in Autonomous Robotics

Robotics R&D lead and engineer

Prague, Czech Republic
+420 739 757 519
petracekpav@gmail.com
mrs.fel.cvut.cz/pavel-petracek
github.com/petrapa6
linkedin.com/pavelpetracek
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. *4/2023–12/2025*
R&D Projects Lead & Hands-On Developer
- Led robotics R&D team of 6, moved autonomy to real-world
- Deployed autonomous drones in Temelín nuclear power plant
- Delivered autonomous drones to clients worldwide

Multi-Robot Systems @ CTU *2016–12/2025*
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 cooperating 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 12 (WoS), 16 (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 CTU in their respective category and year

Czech National Excellence Award M17+ 2022
Excellent international evaluation of our Dronument solution (link)