CTU Global Postdoc Fellowship

Czech Technical University in Prague now offers a new fellowship program, the CTU Global Postdoc Fellowship. This new and attractive two-year fellowship-program offers excellent researchers who have recently completed their PhD the chance to continue their research career at CTU. Fellows receive a two year fellowship and become members of a team led by a mentor.

The scholarship applicant must meet the following conditions on the date of application

- be no more than 7 years since obtaining the first PhD degree,
- PhD. studies at a university outside the Czech Republic or have completed at least a one-year working research stay abroad (outside the Czech Republic),
- be an author (co-author) of three or more publications in a journal with IF or CORE A*/A conference paper.

The CTU Global Postdoc Fellowship is open to all topics listed later in this document. Researchers are invited to apply directly to the faculty/institute, see details below. The mentor has a strong vote in the selection process.

Applicants are advised to contact mentors for more details.

The deadline for submission is indicated for each research topic/position. How to apply.

Shortcuts to topics/positions at faculties and institutes (click Topics/positions)	
Topic #12-x	Topics/positions available at the Czech Institute of Informatics, Robotics and Cybernetics

CTU Global Postdoc Fellowship

Document version 1.9 Latest version of this document as well as latest information can be found at international.cvut.cz/postdoc

Topics/positions available at the

Czech Institute of Informatics, Robotics and Cybernetics

Applications should be sent to

E-mail: Katerina.Hanzalova@cvut.cz

or

CIIRC CVUT
Attn: Mgr. Kateřina Hanzalová
Jugoslávských partyzánů 1580/3
160 00 Praha 6
Czech Republic

CTU Global Postdoc Fellowship

Research topic #12-1

1 Topic	Machine learning security and resilience
ERC research field descriptor	9.0 Computer science
2 Link to topic / project page	https://www.ciirc.cvut.cz/teams-labs/ai/ml/
3 Short description of topic	Machine learning models play an increasingly important role in decision making across many applied domains such as robotics, health, or finance. It is therefore crucially important that they are sufficiently secure and resilient to adversarial or anomalous input. In this project, we aim to develop methods that improve the security and resilience of machine learning models, with emphasis on robotics applications, so improving the robustness of robots especially in open environments.
4 Description of ideal candidate	Background in machine learning. Experience/interest in data analytics, robotics, and cybersecurity is welcome.

Mentor

Robert Babuška	CIIRC	Machine Learning	robert.babuska@cvut.cz

Salary: CZK 75 000 per month
Application deadline: Open call

CTU Global Postdoc Fellowship

Research topic #12-4

1 Topic	**Precise Visual Localization and Navigation via Implicit Neural Scene Representations**
ERC research field descriptor	9.0 Computer science
2 Link to topic / project page	https://www.ciirc.cvut.cz/cs/teams-labs/rmp/aag/
3 Short description of topic	Visual localization and navigation algorithms are key capabilities for a wide range of applications, including autonomous robots such as self-driving cars and augmented / virtual reality systems. Typically, these algorithms rely on explicit and discrete scene representations, e.g., sparse Structure-from-Motion point clouds in the context of visual localization or voxel grids for navigation and path planning. Recently, implicit scene representations based on neural networks have been proposed that offer a continuous scene representation, with highly impressive results in terms of the accuracy of the represented 3D geometry. The objective of this post-doc project is to develop visual localization and navigation algorithms based on implicit neural scene representations. The goal is to exploit the potential of these representations, which promise highly accurate 3D scene geometry at a small memory footprint, to design highly precise localization and navigation approaches. Important scientific challenges of this project include handling changing conditions, e.g., moving furniture, and precise representations in large-scale scenes (where the camera can be 10-100 meters away from the scene).
4 Description of ideal candidate	Strong background in 3D computer vision, robotics, and / or deep learning. Publications at the top conferences/journals in those fields, e.g., CVPR, ICCV, ECCV, NeurIPS, ICML, IJCV, TPAMI, ICLR, IROS, ICRA, CoRL, RSS or RAL.

Mentor

Torsten Sattler	CIIRC	RMP	torsten.sattler@cvut.cz

Salary: CZK 75 000 per month
Application deadline: Open call

CTU Global Postdoc Fellowship

Research topic #12-5

1 Topic	**Learning visuomotor skills for robotic manipulation**
ERC research field descriptor	9.0 Computer science
2 Link to topic / project page	http://impact.ciirc.cvut.cz/
3 Short description of topic	Humans can solve everyday manipulation tasks remarkably efficiently and safely. With only a few interactions they learn to use tools without knowing a priori their exact physical properties or the properties of the environment to solve tasks such as hammering a nail, shoveling snow, raking leaves, or drilling holes into different materials. Currently, there is no artificial system with a similar level of visuomotor capabilities. The objective of this post-doc project is to develop machine learning models grounded in the physical and geometrical structure of the world to enable learning safe visuomotor skills for robotic manipulation in new unseen environments with only a minimal amount of supervision, for example, coming from observing people performing the same task.
4 Description of ideal candidate	We are looking for strongly motivated candidates with interest in computer vision, machine learning and robotics. Successful candidates will have a strong background in at least one of these fields, excellent programming skills and a proven track-record of publications at the top conferences/journals in those fields that include CVPR, ICCV, ECCV, NeurIPS, ICML, IJCV, TPAMI, JMLR, IROS, ICRA, CoRL, RSS or RAL.

Mentor

Josef Šivic	CIIRC	RMP	josef.sivic@cvut.cz

Salary: CZK 75 000 per month

Application deadline: Open call

Applications and selection proces

To apply for the CTU Global Postdoc Fellowship you need the following documents in English:

- CV, including list of publications (max. 4 pages). At least three IF [1] journal publications are expected or CORE A*/A conference paper. Papers accepted for publication yet waiting to be prited do count if a proof of acceptance is provided.
- Motivation letter (max. 2 pages).
- PhD certificate (copy).
- Application for CTU Postdoc Fellowship Program – completed and signed.
- You may attach other documents supporting yor application such as recommendation letters etc.

Each research topic/proposal has a deadline for submission.

Please note that submissions should be sent to the contact address of the faculty/institute listed in the list of topics/positions.

Selection process:

- Applications will be assessed by the committee on the basis of the documents sent by the applicants. The mentor has a casting vote in the selection procedure.
- The interview will be arranged online.
- The starting date is indicated for each research topic/position.

1 Impact Factor. We follow the Web of Science Journal Citation Reports .