

Siniša Šteković

Curriculum vitae

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Personal Details

Citizenship Croatia
Academic degree Dipl.-Ing. Dr.techn.
Website <https://www.tugraz.at/institute/icg/research/team-lepetit/people/sinisa-stekovic>
Twitter https://twitter.com/stekovic_sinisa
YouTube [Sinisa Stekovic\(TU Graz\)](#)
GitHub <https://github.com/vevenom>
Scholar: <https://scholar.google.com/citations?user=T0qGNQYAAAAJ&hl=en&oi=ao>
Research Interests: 3D Scene Understanding, 3D Vision, Robotics, Machine Learning

Work Experience

2024– **Postdoctoral Researcher**, *École des Ponts ParisTech*, France.
2023–2024 **Postdoctoral Researcher**, *Graz University of Technology*, Austria.
2018–2023 **Research Assistant (PhD)**, *Graz University of Technology*, Austria.
Supervisors:
○ Univ.-Prof. Dr. Vincent Lepetit, vincent.lepetit@enpc.fr
○ Univ.-Prof. Dr. Friedrich Fraundorfer, fraundorfer@icg.tugraz.at
2022 **Research Scientist Intern**, *Meta Platforms, Inc.*, United States of America.
2018 **Student Assistant**, *Graz University of Technology*, Austria.

Education

2018–2023 **PhD**, *Graz University of Technology*, Austria, *Computer Science* (with distinction).
Thesis: Playing Proposal Selection Games in 3D Scene Understanding
Supervisors:
○ Univ.-Prof. Dr. Vincent Lepetit, vincent.lepetit@enpc.fr
○ Univ.-Prof. Dr. Friedrich Fraundorfer, fraundorfer@icg.tugraz.at
2016–2018 **MSc**, *Graz University of Technology*, Austria, *Computer Science* (with distinction).
Thesis: Reinforcement Learning With Deep Networks And A Robot
Advisor: Univ.-Prof. Dr. Vincent Lepetit

- 2012–2016 **BSc**, *Graz University of Technology, Austria, Computer Science*.
Thesis: Large-Scale Object Recognition and Tracking
Advisor: Univ.-Prof. Dr. Vincent Lepetit
- 2007–2011 **High school**, *Elektro in računalniška šola (School of Electrical and Computer Engineering)*, Velenje, Slovenia.
- 1999–2007 **Elementary school**, *OŠ Branko Ćopić*, Banja Luka, Bosnia and Herzegovina.

Research Work

- 2024 Sinisa Stekovic, Stefan Ainetter, Mattia D'Urso, Friedrich Fraundorfer, Vincent Lepetit. **PyTorchGeoNodes: Enabling Differentiable Shape Programs for 3D Shape Reconstruction**. Arxiv, <https://arxiv.org/abs/2404.10620>.
- 2024 Stefan Ainetter, Sinisa Stekovic, Friedrich Fraundorfer, Vincent Lepetit. **HOC-Search: Efficient CAD Model and Pose Retrieval from RGB-D Scans**. In International Conference on 3D Vision (3DV), <https://arxiv.org/abs/2309.06107>.
- 2023 Stefan Ainetter, Sinisa Stekovic, Friedrich Fraundorfer, Vincent Lepetit. **Automatically Annotating Indoor Images with CAD Models via RGB-D Scans**. In IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), [10.1109/WACV56688.2023.00317](https://arxiv.org/abs/10.1109/WACV56688.2023.00317).
- 2022 Michael Ramamonjisoa, Sinisa Stekovic, Vincent Lepetit. **MonteBoxFinder: Detecting and Filtering Primitives to Fit a Noisy Point Cloud**. In European Conference on Computer Vision (ECCV), [10.1007/978-3-031-19815-1_10](https://arxiv.org/abs/10.1007/978-3-031-19815-1_10).
- 2022 Sinisa Stekovic, Mahdi Rad, Alireza Moradi, Friedrich Fraundorfer, and Vincent Lepetit. **MCTS with Refinement for Proposals Selection Games in Scene Understanding**. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), [10.1109/TPAMI.2022.3203729](https://arxiv.org/abs/10.1109/TPAMI.2022.3203729).
- 2021 Sinisa Stekovic, Mahdi Rad, Friedrich Fraundorfer, and Vincent Lepetit. **MonteFloor: Extending MCTS for Reconstructing Accurate Large-Scale Floor Plans**. In International Conference on Computer Vision (ICCV), [10.1109/ICCV48922.2021.01573](https://arxiv.org/abs/10.1109/ICCV48922.2021.01573).
Oral presentation, Selected for TPAMI Special Section on the Best Papers of ICCV 2021, Registered invention
- 2021 (*) Shreyas Hampali, (*) Sinisa Stekovic, Sayan D. Sarkar, Chetan S. Kumar, Friedrich Fraundorfer, and Vincent Lepetit. **Monte Carlo Scene Search for 3D Scene Understanding**. In Conference on Computer Vision and Pattern Recognition (CVPR), [10.1109/CVPR46437.2021.01359](https://arxiv.org/abs/10.1109/CVPR46437.2021.01359).
(*) **Authors contributed equally**

- 2020 Sinisa Stekovic, Shreyas Hampali, Mahdi Rad, Sayan D. Sarkar, Friedrich Fraundorfer, and Vincent Lepetit. **General 3D Room Layout from a Single View by Render-and-Compare**. In European Conference on Computer Vision (ECCV), [10.1007/978-3-030-58517-4_12](#).
- 2020 Sinisa Stekovic, Friedrich Fraundorfer, and Vincent Lepetit. **Casting Geometric Constraints in Semantic Segmentation as Semi-Supervised Learning**. In IEEE Winter Conference on Applications of Computer Vision (WACV), [10.1109/WACV45572.2020.9093571](#).

Advising Involvements

- 2021-2022 Amir Hodzic. **Multi-View Semantic Segmentation**. Bachelor's Thesis, Supervisor: Univ.-Prof. Dr. Vincent Lepetit.
- 2021-2022 Alireza Moradi. **Single-View Room Layout Estimation**. Internship Project, Supervisor: Univ.-Prof. Dr. Vincent Lepetit.
- 2020-2021 Chetan S. Kumar. **Urban Visual Localization with Map Data**. Master's Thesis, Supervisor: Assoc. Prof. Dipl.-Ing. Dr.techn. Friedrich Fraundorfer.

Outlined Achievements

- 2024 **Submitted Research Project Proposal to FWF (Austrian Funding Agency), 3/3 'Excellent' rating by reviewers.**
- 2021, 2023 Recognized 2 times as an inventor at TU Graz during official ceremony "Ehrung der Erfinderinnen und Erfinder".
- 2022 Sinisa Stekovic, Friedrich Fraundorfer, and Vincent Lepetit. **Layout Estimation Using Planes**, *US Patent 11,328,476*.
- 2022 Shreyas Hampali, Sinisa Stekovic, Friedrich Fraundorfer, and Vincent Lepetit. **Scene Layout Estimation**, *US Patent 11,797,724*.
- 2022 MonteScene released on GitHub: <https://github.com/vevenom/MonteScene> .
- 2021 One paper selected for TPAMI Special Section on the Best Papers of ICCV 2021.
- 2020 RoomLayout3D_RandC released on GitHub: https://github.com/vevenom/RoomLayout3D_RandC.
- 2018- Volunteering as reviewer at high-impact conferences and journals (CVPR, ICCV, ECCV, 3DV, TPAMI, CVIU) .
- 2018 Guest Speaker, BMVA Symposium on Reinforcement Learning in Computer Vision , *Experience Replay For Learning Multiple Environments*, <https://www.eventbrite.co.uk/e/bmva-symposium-on-reinforcement-learning-in-computer-vision-registration-42580295811>.

- 2018 Reinforcement Learning With Deep Networks And A Robot, Student project and Master Thesis, Institute of Computer Graphics and Vision, Graz University Of Technology.
- 2017 Learning to Learn, Student Project, Institute of Theoretical Computer Science, Graz University Of Technology.
- 2016 Took part in the qualification stage of Google Hash Code 2016 as a member of the team Oggy And The Cockroaches.