

# Aleksandar Stanić

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## Education

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- Feb 2018–present **IDSIA, Switzerland, Ph.D. in Computer Science (Artificial Intelligence)**  
Supervisor: **Jürgen Schmidhuber**  
Multimodal Learning | Vision-Language Models | Self-supervised Learning | Contrastive Learning  
OOD Generalization | Generative Models | Computer Vision |(Structured) Representation Learning  
Deep Learning (CNNs, RNNs, GNNs, Transformers, LLMs, VLMs) | Deep Reinforcement Learning
- Sep 2013–Dec 2015 **ETH Zurich, Switzerland, M.Sc., Information Technology and EE (GPA: 5.5/6)**  
Focus: Information Theory | Machine Learning | Statistics | Computer Vision | Signal Processing  
Semester Project Advisor: **Luc Van Gool**, Master Thesis Advisor: **Helmut Bölcskei**
- Sept 2009–June 2013 **University of Belgrade, Serbia, B.Sc., Information Technology and Electrical Engineering**  
(GPA: 9.76/10) *Best Graduated Student Award*

## Professional Experience

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- July–Dec 2023 Research Intern, **Google**.
- Jun–Nov 2022 Research Scientist Intern, **DeepMind**.
- Feb–May 2022 Research Internship, **Google Brain**.
- 2018–present Graduate Teaching Assistant, **USI, Lugano, Switzerland**  
*Courses: Machine Learning, Deep Learning Lab. Designing and holding exercise sessions; designing and grading assignments and exams; mentoring group projects.*
- 2016–2018 Research Engineer, **uniqFEED AG, Zurich, Switzerland**  
*Research and development of computer vision algorithms (Python, C++).*
- 2014–2015 Research Intern, **Computer Vision Lab, ETH Zurich, Switzerland**  
*Developing ML algorithms for online data analysis (false alarm detection and treatment recommendation) in the 'AI in Intensive Care and Emergency Medicine' project.*
- 2010–2013 Undergraduate Teaching Assistant, **University of Belgrade, Serbia**  
*Design and assessment of laboratory exercises; Supervising group experiments.*

## Publications

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- [1] **Stanić, A.**, Gopalakrishnan, A., Irie, K. & Schmidhuber, J. Contrastive Training of Complex-Valued Autoencoders for Object Discovery. **Neural Information Processing Systems (NeurIPS), 2023**.
- [2] **Stanić, A.**, Ashley, D., Serikov, O., Kirsch, L., Faccio, F., Schmidhuber, J., Hofmann, T. & Schlag, I. The Languini Kitchen: Enabling Language Modelling Research at Different Scales of Compute. Preprint: <https://arxiv.org/abs/2309.11197>. Under review..
- [3] **Stanić, A.**, Tang, Y., Ha, David & Schmidhuber, J. An Investigation into the Open World Survival Game Crafter. **IEEE Transactions on Games**. Preliminary version in workshops on Decision Awareness in RL and Responsible Decision Making in Dynamic Environments, **ICML 2022**.
- [4] **Stanić, A.**, van Steenkiste, S. & Schmidhuber, J. Hierarchical Relational Inference. *Proc. of the AAAI Conference on Artificial Intelligence AAAI 2021*,
- [5] Zhuge M., Liu H., Faccio F., Ashley D., Csordas R., Gopalakrishnan A., Hamdi A., Al Kader Ham-moud H. A., Herrmann V., Irie K., Kirsch L., Li B., Li G., Liu S., Mai J., Piekos P., Ramesh

A., Schlag I., Shi W., **Stanić A.**, Wang W., Wang Y., Xu M., Fan DP., Ghanem B., Schmidhuber J.. Mindstorms in Natural Language-Based Societies of Mind *Preprint*: <https://arxiv.org/abs/2305.17066>. *Under review.*

- [6] Miladinović D., **Stanić, A.**, Bauer, S., Schmidhuber, J. & Buhmann, J. (2021). Spatial Dependency Networks: Neural Layers for Improved Generative Image Modeling. , **ICLR 2021**.
- [7] **Stanić, A.**, van Steenkiste, S. & Schmidhuber, J. Hierarchical Relational Inference (preliminary v.). *Workshop on Object-Oriented Learning: Perception, Representation, and Reasoning, ICML 2020*.
- [8] **Stanić, A.** & Schmidhuber, J. (2019). R-SQAIR: Relational Sequential Attend, Infer, Repeat. *Workshops on Perception as Generative Reasoning, & Graph Representation Learning, NeurIPS 2019*.
- [9] Wiatowski, T., Tschannen M., **Stanić, A.**, Grohs P. & Bölskei H. Discrete Deep Feature Extraction: A Theory and New Architectures. *Proc. of International Conference on Machine Learning, New York, USA, pp. 2149-2158, ICML 2016*.
- [10] **Stanić, A.** (2015). Deep Generalized Scattering Networks for Classification. *M.Sc. Dissertation. ETH Zurich*.

## Grants

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2020 Swiss National Supercomputer (CSCS) grant of a total of 200'000 GPU compute hours for research on Learning Structured World Models for Visual Perception and Reasoning

## Scholarships and Awards

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2019 **DeepMind** Travel Grant for NeurIPS 2019

2015 **ETH Zurich** Scholarship for Foreign Students

2013 **Best graduated student**, Department of Telecommunications and Information Technology, School of Electrical Engineering, University of Belgrade

2013-2015 Dositeja **Scholarship for Master Studies** in Switzerland

2013 Ilija Stojanovic Award for the best graduated student at the Telecommunications Department at University of Belgrade

2010-2012 Multiple scholarships for gifted students, City of Belgrade and Ministry of Education, Science and Technological Development, Republic of Serbia

## Service

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### Reviewing

- Neural Information Processing Systems (**NeurIPS**).
- International Conference on Machine Learning (**ICML**).
- International Conference on Learning Representations (**ICLR**).
- ICML 2020 Workshop on Object-Oriented Learning (OOL): Perception, Representation, and Reasoning
- ICML 2020 Workshop on Graph Representation Learning and Beyond (GRL+)
- NeurIPS 2020 Workshop on Object Representations for Learning and Reasoning

### Volunteering

- European Conference on Computer Vision (ECCV) 2014

## **Computer Skills**

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- Advanced: Python | PyTorch | Bash | LaTeX
- Intermediate: JAX | TensorFlow | C++ | Matlab
- Frameworks used: Unix | Git | OpenCV | Pandas | Scikit-learn | SciPy | NumPy | MongoDB | Hadoop  
MapReduce | IBM Streams | Inkscape | GIMP

## **Languages**

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- Serbian: Native
- English: Fluent
- German: Intermediate
- Italian: Beginner
- Spanish: Beginner