Jan Bednařík

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EDUCATION

09/2016 – 02/2022 **PhD, Computer Science**, École Polytechnique Fédérale de Lausanne (EPFL)

- *Computer Vision Laboratory (CVLAB),* thesis advisors Prof. Pascal Fua, Dr Mathieu Salzmann
- *Research topic:* Deformable 3D objects modeling and reconstruction using deep learning
- *Research interests:* deformable 3D shape reconstruction and representation, differentiable geometry, Shape-from-X

09/2013 – 06/2016 **MSc, Computer Science**, Brno University of Technology (BUT), Computer Graphics and Multimedia

- *Thesis:* Optical Localization of Very Distant Targets in Multi-Camera Systems
- Graduated summa cum laude, The Dean's award for outstanding Master's thesis.

08/2013 – 12/2013 **Erasmus, Computer Science**, Norwegian University of Science and Technology (NTNU)

- Projects in artificial intelligence, agile development.

09/2010 – 06/2013 **BSc, Computer Science**, Brno University of Technology (BUT)

- *Thesis:* Conversion of Piano Recording from WAV to MIDI
- Graduated cum laude, The Dean's award for outstanding Bachelor's thesis.

PUBLICATIONS

preprint 2021 **Bednařík J.**, Aigerman N., Kim V., Chaudhuri S., Parashar S., Salzmann M., Fua P.
Temporally-Consistent Surface Reconstruction via Metrically-Consistent Atlases

ICCV 2021 **Bednařík J.**, Kim V., Chaudhuri S., Parashar S., Salzmann M., Fua P., Aigerman N.
Temporally-Coherent Surface Reconstruction via Metric-Consistent Atlases

3DV 2020 Deng Z., **Bednařík J.**, Salzmann M., Fua P.
Better Patch Stitching for Parametric Surface Reconstruction

CVPR 2020 **Bednařík J.**, Parashar S., Gundogdu E., Fua P., Salzmann M.
Shape Reconstruction by Learning Differentiable Surface Representations

3DV 2018 **Bednařík J.**, Fua P., Salzmann M.
Learning to Reconstruct Texture-less Deformable Surfaces from a Single View

Excel@FIT 2016 **Bednařík J.** Optical Localization in Multi Camera System

Excel@FIT 2015 **Bednařík J.**, Hermann D. Human gesture recognition using top view depth data

EXPERIENCE

06/2020-10/2020 **Research Intern**, Adobe *(San Francisco, California)*

Formulated an approach to unsupervised 3D shape correspondence retrieval from point clouds with focus on sequences of deformable surfaces such as humans. The resulting paper was accepted to ICCV 2021.

09/2014 – 07/2016 **Computer Vision Engineer**, RCE Systems *(Brno, Czechia)*

Designed a multi-camera Tracking and Localization System within the Czech Science Foundation project. Built a Human Gesture Recognition System using top-view depth data.

02/2014 – 09/2014 **Quality Assurance Engineer internship**, Red Hat *(Brno, Czechia)*

Worked in Jboss Operations Network team (testing Jboss middlewear, writing test automation).

SKILLS

MACHINE LEARNING PyTorch, PyTorch 3D, Keras, Scikit-learn

VISUAL COMPUTING Numpy, SciPy, OpenCV, PCL, ROS

PROGRAMMING Python, C/C++, Matlab

LANGUAGES English (C1), French (A2), Czech (native)

AWARDS AND CERTIFICATES

11/2016 **LauzHack 2016 - 1st prize for Challenge, 3rd prize overall**
Annual hackathon at EPFL Lausanne
Project: removing cloud shadows from aerial multispectral images

11/2016 **ACM IT SPY 2016 – finalist, 1st prize for outstanding project presentation**
IT competition evaluating 1900 diploma theses of Czech and Slovak university students
Project: Optical Localization of Very Distant Targets in Multi Camera System

04/2016 **Excel@FIT 2016 - Scientific approach award**, Student conference at BUT
Project: Optical Localization of Very Distant Targets in Multi Camera System

04/2015 **Excel@FIT 2015 - Excellent idea (1st) and Innovation (2nd) prize,** Student conference at BUT
Project: Gesture recognition using top-view depth data

06/2014 **Certificate of Computer Vision and Intelligent Systems** (University of Burgundy, Le Creusot, France)
2 weeks programme consisting of lectures and workshops in AI, vision, robotics

REVIEWING

2021 ICCV, ICLR, CVPR

2020 TPAMI, ECCV, CVPR, Perception Beyond Visible Spectrum Workshop (CVPR)

2019 TPAMI, Image Matching: Local Features & Beyond (CVPR), ICCV, Computer Vision for Road Scene Understanding and Autonomous Driving (ICCV)

2018 CVIU, Computer Vision for Road Scene Understanding and Autonomous Driving (ECCV)

TEACHING

COURSES Machine Learning (CS-433), Numerical Methods for Visual Computing (CS-328), Introduction to Computer Graphics (CS-341), Introduction to Machine Learning (CS-233)

STUDENTS Leonardo Aoun, “Intrinsic Image Decomposition Using Deep Neural Networks” (fall 17)
Zhantao Deng, “Better Patch Stitching for Parametric Surface Reconstruction” (spring 20)
Rohith Jayakumara, “Fast Approximate Surface Properties of Parametric Mappings” (fall 2021)

INTERESTS

travelling, photography, climbing, playing piano