

Songyou Peng | Curriculum Vitae

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Education

ETH Zurich

PhD Student, Max Planck ETH Center for Learning Systems
Supervisor: Prof. Marc Pollefeys & Prof. Andreas Geiger

Zurich, Switzerland

09/2019–present

Heriot-Watt University/University of Girona/University of Bourgogne

Erasmus Mundus M.Sc in Computer Visions and Robotics (VIBOT)

09/2015–09/2017

GPA: 17/20 (**rank 3/23**) with distinction

Thesis: “High Quality Shape from an RGB-D Camera Using Photometric Stereo”

Supervisor: Prof. Daniel Cremers

Xi’an Jiaotong University

B.Eng in Automation, focus: artificial intelligence

Xi’an, China

08/2011–07/2015

Cumulative GPA: 83.6/100, Major GPA: 87.4/100

Experience

Agency for Science, Technology and Research (A*STAR)

Research Engineer, Institute for Infocomm Research

Singapore

10/2018–07/2019

- Performed an independent research project on universal architecture for bad-weather image restoration.
- Worked on traffic flow prediction with gated spatial-temporal CNNs and graph CNNs.

Advanced Digital Sciences Center, UIUC

Research Engineer, supervisor: Dr. Stefan Winkler, IEEE Fellow
Research in affective computing.

Singapore

01/2018–03/2019

- Developed a facial emotion analysis SDK for a 2-million SGD project.
- Published an ACM MM demo paper and an IEEE Transactions on Affective Computing paper.
- Won 1st place in vision-only task and 2nd place in overall in OMG-Emotion Challenge 2018.

Technical University of Munich (TUM)

Research Intern, supervisor: Prof. Daniel Cremers & Dr. Yvain Queau
Depth Super-Resolution using photometric techniques.

Munich, Germany

01/2017–07/2017

- Proposed three photometric methods to obtain high-resolution depths with fine geometric details.
- One TPAMI paper and one ICCVW paper.

INRIA

Research Intern, supervisor: Prof. Peter Sturm
Research in camera calibration.

Grenoble, France

2016 & 2017 summer

- Designed a calibration guidance system which interactively guides to optimal calibration images.
- One ICCV oral paper.

INMOTION Technologies CO., LTD

Machine Vision Algorithm Intern
Research in person re-identification

Shenzhen, China

07/2015–08/2015

- Approached accurate real-time person re-identification without facial information

Publications

Published.....

- **Songyou Peng**, Michael Niemeyer, Lars Mescheder, Marc Pollefeys, Andreas Geiger, "Convolutional Occupancy Networks". European Conference on Computer Vision (**ECCV**), 2020. (**Spotlight, top 5%**)
- Shaohui Liu, Yinda Zhang, **Songyou Peng**, Boxin Shi, Marc Pollefeys, Zhaopeng Cui, "DIST: Rendering Deep Implicit Signed Distance Function with Differentiable Sphere Tracing". IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020.
- **Songyou Peng**, Peter Sturm, "Calibration Wizard: A Guidance System for Camera Calibration Based on Modelling Geometric and Corner Uncertainty". International Conference on Computer Vision (**ICCV**), 2019. (**Oral**)
- Bjoern Haefner*, **Songyou Peng***, Alok Verma*, Yvain Quéau, Daniel Cremers, "Photometric Depth Super-Resolution". IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2019. (* equal contribution)
- Le Zhang, **Songyou Peng**, Stefan Winkler, "PersEmon: A Deep Network for Joint Analysis of Personality, Emotion and Their Relationship". IEEE Transactions on Affective Computing (**TAFCC**), 2019. (IF: 6.29)
- **Songyou Peng**, Le Zhang, Stefan Winkler, Marianne Winslett, "Give Me One Portrait Image, I Will Tell You Your Emotion and Personality". ACM Multimedia Conference (**ACM MM**), 2018. Demo paper.
- **Songyou Peng**, Bjoern Haefner, Yvain Quéau, Daniel Cremers, "Depth Super-Resolution Meets Uncalibrated Photometric Stereo". International Conference on Computer Vision Workshops (**ICCVW**), 2017.

Pre-Print.....

- Paola Ardon*, Kaisar Kushibar*, **Songyou Peng***, "A Hybrid SLAM and Object Recognition System for Pepper Robot". arXiv:1903.00675, 2019. (* equal contribution)
- **Songyou Peng**, Le Zhang, Yutong Ban, Meng Fang, Stefan Winkler, "A Deep Network for Arousal-Valence Emotion Prediction with Acoustic-Visual Cues". arXiv:1805.00638, 2018.

Honor

- 1st in vision-only task and 2nd in overall in IJCNN OMG-Emotion Recognition Challenge, 2018
- EU Erasmus+ mobility grant, awarded by European Union Commission, 2016 & 2017
- Excellent bachelor thesis (top 5% of all graduates), XJTU , 2015
- 1st in Search and Rescue Robot Challenge, California State University, USA, 2010
- 2nd in Trinity College Fire Fighting Home Robot Contest, Connecticut, USA, 2010
- 2nd in RoboCup Junior China Qualification Trial, Suzhou, China, 2007

Teaching

Teaching Assistant at ETH Zurich.....

- [252-0579-00L] 3D Vision Spring'20
- [263-5904-00L] Deep Learning for Computer Vision: Seminal Work Spring'20