

# CHENGZHOU TANG

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## RESEARCH INTERESTS

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My research interests include low-&mid-level computer vision problems (Structure-from-Motion, SLAM, Optical Flow etc.), especially on bridging the gap between deep learning techniques and conventional white-box computer vision models.

## FULL-TIME POSITIONS

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**Apple** July 2020 - Current  
*Machine Learning Engineer*  
Work on 3D computer vision for maps.

## EDUCATION

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**Simon Fraser University** January 2015 - March 2020  
School of Computing Science  
Ph.D. Candidate in Computer Science

**Peking University** August 2011 - July 2014  
School of Electronic and Computer Engineering  
M.S. in Computer Applied Technology

**China Agricultural University** September 2008 - July 2011  
College of Information and Electrical Engineering  
B.S. in Computer Science & Technology of Honours Program

## PUBLICATIONS

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Shitao Tang, **Chengzhou Tang**, Rui Huang, Siyu Zhu, and Ping Tan. DSM: Dense Scene Matching for Camera Localization. CVPR 2021.

**Chengzhou Tang**, Lu Yuan and Ping Tan. LSM: Learning Subspace Minimization for Low-level Vision. CVPR 2020 (Oral presentation, 5% acceptance rate).

Luwei Yang, Ziqian Bai, **Chengzhou Tang**, Honghua Li, Yasutaka Furukawa and Ping Tan. SANet: Scene Agnostic Network for Camera Localization. ICCV 2019.

**Chengzhou Tang** and Ping Tan. BA-Net: Dense Bundle Adjustment Networks. ICLR 2019 (Oral presentation, 1.7% acceptance rate).

**Chengzhou Tang**, Oliver Wang, Feng Liu, and Ping Tan. Joint Direction and Stabilization for 360° Videos. TOG (Presented at SIGGRAPH 2019).

**Chengzhou Tang**, Oliver Wang and Ping Tan. GSLAM: Initialization-robust Monocular Visual SLAM via Global Structure-from-Motion. 3DV 2017.

Zhaopeng Cui, Nianjuan Jiang, **Chengzhou Tang** and Ping Tan. Linear Global Translation Estimation with Feature Tracks. BMVC 2015.

**Chengzhou Tang**, Ronggang Wang. Local Subspace Video Stabilization. In: IEEE International Conference on Multimedia & Expo, 2014

**Chengzhou Tang**, Ronggang Wang. Sparse Moving Factorization for Subspace Video Stabilization. In: IEEE International Conference on Acoustics, Speech and Signal, 2014

**Chengzhou Tang**, Ronggang Wang, Wenmin Wang. Adaptive Motion Estimation Order for Frame Rate Up-conversion. In: IEEE International Symposium on Circuits and Systems, 2013.

## PATENTS

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Method for motion vector estimation US9584824B2 (Grant)

Low-illumination image processing method and device US20180182074A1(Grant).

Video processing method, device and system US20160112701A1(Grant).

Re-cinematography for spherical video US15619702(Grant).

## RESEARCH INTERNSHIPS

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**Microsoft, AI Perception and Mixed-Reality, Redmond**

July 2019 - October 2019

*Research Intern*

- Project: Calibration-free Multi-view Detection.
- Mentor: Lu Yuan.

**Adobe Research, Creative Tech Lab, Seattle**

September 2016 - December 2016

*Research Intern*

- Project: Panorama Video Re-cinematography.
- Mentor: Oliver Wang.

**Microsoft Research Asia, Visual Computing Group, Beijing**

April 2014 - June 2014

*Research Intern*

- Project: Inertial measurement sensor and image feature fusion for video stabilization.
- Mentor: Lu Yuan.

## SERVICES

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**Reviewers for: Computer Vision:** CVPR, ECCV, ICCV, WACV; IJCV, TPAMI, MVA. **Machine Learning:** NeurIPS, ICML, ICLR, AAAI. **Graphics:** PG, IEEE VR, VRST; TVCG. **Robotics:** IROS, ICRA; AUTON ROBOT.