Mengkun She

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EDUCATION

Christian-Albrechts-Universität zu Kiel, Kiel, Germany — Nov 2020- Present
- Ph.D. in Computer Science
- Topic: Underwater Refractive Camera Calibration and 3D Scene Reconstruction
- Adviser: Prof. Dr. -Ing. Kevin Köser

Chongqing University, Chongqing, China — Sep 2017- Jun 2020
- M.S. in Geoinformatics

Chongqing University, Chongqing, China — Sep 2013- Jun 2017
- B.S. in Surveying and Mapping Engineering (Geoinformatics)

RESEARCH EXPERIENCE

Helmholtz Centre for Ocean Research, Kiel, GEOMAR, — Jan 2019- Jan 2020
- Research Intern
  - Project: BubbleBox - High-speed stereo camera system for seafloor bubble flow estimation
  - Focus: Refractive underwater camera calibration; Stereo; Object detection and tracking in video.

Helmholtz Centre for Ocean Research, Kiel, GEOMAR, — Nov 2020- Jun 2024
- Research Scientist
  - Project: Deep Quanticam - visual mapping and quantitative machine vision in the deep sea
  - Focus: Refractive geometry; Navigation-aided SfM; Refractive SfM; Underwater NeRF.

SELECTED PUBLICATIONS

M. She, F. Seegräber, D. Nakath, P. Schöntag, K. Köser. Relative Illumination Fields: Learning Medium and Light Independent Underwater Scenes. (Submitted to *CVPR, 2025*)

M. She, F. Seegräber, D. Nakath, K. Köser. Refractive COLMAP: Refractive Structure-from-Motion Revisited. In *IROS, 2024* (**Oral**)

M. She, Y. Song, D. Nakath, K. Köser. Semihierarchical Reconstruction and Weak-area Revisiting for Robotic Visual Seafloor Mapping. In *Journal of Field Robotics*

M. She, T. Weiß, Y. Song, P. Urban, J. Greinert, K. Köser. Marine Bubble Flow Quantification Using Wide-baseline Stereo Photogrammetry. In *ISPRS Photogrammetry and Remote Sensing*

M. She, D. Nakath, Y.Song, K. Köser. Refractive Geometry on Underwater Domes. In *ISPRS Photogrammetry and Remote Sensing*

X. Weng*, **M. She***, D. Nakath, K. Köser (**Equal Contribution*). Macal - Macro Lens Calibration and the Focus Stack Camera Model. In *3DV, 2021* (**Oral**)

M. She, Y. Song, J Mohrmann, K. Köser. Adjustment and Calibration of Dome Port Camera Systems for Underwater Vision. In *GCPR, 2019* (**Oral**)

AWARDS & SCHOLARSHIPS

- Doctoral scholarship granted by China Scholarship Council (CSC) — 2020 – 2024
- Travel grant for young researchers by Deutsche Arbeitsgemeinschaft für Mustererkennung, DAGM 2019

SKILLS

C++, Python, PyTorch, Ceres-Solver, Linux

REFERENCES

- **Prof. Dr. -Ing. Kevin Köser**
  Professor of Computer Science
  Marine Data Science Group
  Christian-Albrechts-Universität zu Kiel
  Alexander-Behm-Haus - EG.011, Neufeldtstraße 6, Kiel, Germany
  Email: kk@informatik.uni-kiel.de

- **Dr. David Nakath**
  Postdoc at the Marine Data Science Group
  Christian-Albrechts-Universität zu Kiel
  Alexander-Behm-Haus, Neufeldtstraße 6, Kiel, Germany
  Email: dna@informatik.uni-kiel.de