



## Jingsong Liu

**Date of birth:** 16/02/1997 | **Nationality:** Chinese | **Gender:** Male | **Phone**

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**Address:** Studentenstadt, 80805, Muenchen, Germany (Home)

### ● WORK EXPERIENCE

10/2021 – 02/2022

**DISHI MEDICAL BIOLOGY C.O. (STARTUP)** DIRECTOR OF SOFTWARE DEVELOPMENT GROUP

Develop the retinal simulation system; Negotiate with investors, participate in the roadshow; Assist company grow up (co-workers from 3 to current 20+)

02/2023 – CURRENT

**CHAIR LEARNING AND OPTIMISATION FOR VISUAL COMPUTING AT UNI BONN** RESEARCH ASSISTANT (RA)

Under supervision of Prof. Florian Bernard

03/2021 – 08/2021

**CHAIR OF VISUAL COMPUTING AND ARTIFICIAL INTELLIGENCE** TEACHER ASSISTANT (TUTOR)

*Introduction to deep learning*, lectured by Prof. Mattias Niesner

04/2021 – 09/2021

**CHAIR OF MATERIALS HANDLING, MATERIAL FLOW, LOGISTICS** LAB RESEARCHER (HIWI)

Project VDA5050: the communication protocol between Automated Guided Vehicles and Master

### ● EDUCATION AND TRAINING

10/2019 – CURRENT

**MASTER** Technical University of Munich

**Field of study** Mechatronik und Robotik | **Final grade** 1.4/4.0

09/2014 – 06/2018

**BACHELOR** Dalian University of Technology

**Field of study** mechanical engineering | **Final grade** 1.5/4.0

### ● LANGUAGE SKILLS

Mother tongue(s): **CHINESE**

Other language(s): **GERMAN (C1)** | **ENGLISH (C1)**

## ● ADDITIONAL INFORMATION

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### PUBLICATIONS

#### [Theoretical Error Analysis of Spotlight-based Instrument Localization for Retinal Surgery](#)

Felix Hennerkes, Jingsong Liu, Zhongliang Jiang, Thomas Wendler, M. Ali Nasser, Ioan Iulian Iordachita, Nassir Navab, Mingchuan Zhou\*

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accepted by Robotica, IEEE (ICARM) 2022

#### [Prior-Radgraphformer: A Knowledge-Enhanced Transformer for Generating Radiology Graph from Chest X-ray Images](#)

Yiheng Xiong\*, Jingsong Liu\*, Kamilia Mullakaeva\*, Nassir Navab

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submitted to MICCAI 2023

### HONOURS AND AWARDS

06/2018

**Excellent graduates of Liaoning Province and Dalian University of Technology Top 3% Students**

2017

**Honourable Price (2nd Price) of American College Mathematical Modeling Competition** 

### HOBBIES AND INTERESTS

**Football (Soccer)** Play with Munich Chinese United FC in Royal Bavarian Liga

### RESEARCH EXPERIENCE

01/2022 – 07/2022

#### **Master Thesis: SOFA based retinal surgery simulation system**

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The first retinal vessel injection simulation system supporting Joystick inputs

Contribution: full stack development from modeling with 3D Model Software to the implement of the simulation system

**Links** <https://www.youtube.com/watch?v=-Gi7CAQmXC8> | <https://github.com/TumVink/SOFA-based-retinal-surgery-simulation-system>

02/2021 – 07/2021

#### **SLAM based on the spotlight for retinal surgery**

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Retinal surgery; CV (structured light); Blender; Localization & Mapping; Chamfer distance

Contribution: full stack from modeling in Blender to the algorithm design of performance evaluation

**Link** <https://github.com/TumVink/SOFA-based-retinal-surgery-simulation-system>

10/2021 – 02/2022

#### **3D Object Detection and Relocalization in Indoor Scenes**

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3D detection & relocalization; Indoor dataset (RIO, Scannet); VoteNet; CenterPointNet

Contribution: preprocess the dataset ScanNet and RIO, adjust the CenterPointNet on RIO, visualisation of the detection result using Open3D

**Link** <https://github.com/TumVink/3D-Detection-Relocalization-based-on-CenterPoint>

05/2022 – CURRENT

#### **Structured report generation from X-ray images**

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Proposed Structure Generation Transformer where given X-ray images the outputs are structured reports

Contribution: Preprocessing the dataset MIMIC, generate the new dataset for classification, improve the matching algorithm, evaluation metrics

**Link** <https://github.com/xiongyiheng/Structured-Report-Generation>

04/2021 – 07/2021

### **Single view Reconstruction using Implicit Surface Network**

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Given single view image, outputs the implicit function of surface

Contribution: Full Stack development from preprocessing of the dataset to post-processing the output using Marching Cubes

**Link** <https://github.com/TumVink/Single-view-Reconstruction-using-Implicit-Surface-Network>

10/2020 – 02/2021

### **Autonomous detection and localization of objects based on YOLO and RGB-D camera**

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Deep learning; YOLO classification; Gazebo; RGB-D point-cloud; COCO dataset

Contribution: Apply YOLO detection to RGB-D camera in Gazebo environment

**Link** [https://www.youtube.com/watch?v=Qnj\\_A2usx9o&t=1s](https://www.youtube.com/watch?v=Qnj_A2usx9o&t=1s)

10/2019 – 02/2020

### **Driverless vehicle-model with sensor Lidar and intel D435 depth camera based on ROS**

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Contribution: Detect and follow the tennis ball with depth camera installed on a driverless vehicle

**Link** <https://www.youtube.com/watch?v=3v-gK5ulhpl>

## **REFEREE**

### **Prof. Dr.-Ing. habil. Alois Christian Knoll**

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Website: <https://www.ce.cit.tum.de/air/people/prof-dr-ing-habil-alois-knoll/>

### **Prof. Nassir Navab**

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Website: <https://www.cs.cit.tum.de/camp/members/cv-nassir-navab/nassir-navab/>