Curriculum Vitae ｜Ming Song

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EDUCATION BACKGROUNDS

University of Georgia (Athens, USA)   *01/2021 – Present*

- *Major:* Electrical Computer Engineering   Degree: Doctor of Philosophy

  Major GPA: 3.5/4.0

Leibniz University Hannover (Hanover, Germany)

- *Major:* Navigation and Field Robotics   Degree: Master of Science   *05/2017 – 02/2020*
- German Language Training   *10/2016 – 04/2017*

  Major GPA: 2.2/1.0; (WES GPA:3.7/4.0)

Xidian University (Xi'an, China)   *09/2012 – 06/2016*

- *Major*: Biomedical Engineering   Degree: Bachelor of Engineering

  Major GPA: 3.2/4.0 (3.7/4.0 for last two years of four years, Ranking 1/88)

PREVIOUS EXPERIENCE

- **Graduate Research Assistant**

University of Georgia   *01/2022 – Present*

- Developed and constructed fluorescence light sheet microscopy in combination super resolution structured illumination.
- Developed and Implemented Deep Learning methodology for corrction of spatially varying aberrations arising from the use of an electro-tunable lens in light sheet microscopy.
- Programmed the control software of the microscope using LabVIEW and Arduino
- Image analysis and optical system-based scene simulation using ImageJ, Python, Matlab and C++.
- Designed the optomechanical component using AutoCAD Inventor

Shenzhen Research Institute of Big Data at CUHK(Shenzhen)   *08/2020 – 11/2020*

- Investigating Geophone device and analog-to-digital converter board.
- Implemented and optimized deep learning algorithms to extract features in time series signal.

Leibniz University Hannover   *10/2017 – 07/2019*

- Developed and implemented Iterative Extend Kalman and van Loan method for trajectory estimation with extracted observation features from environment.
- Implemented and optimized lever arm compensation to Strapdown Algorithms.
- Applied data processing and programming techniques to implement a deep learning approach aimed at optimizing semantic segmentation results.
- Developed and implemented algorithms for feature extraction and matching in point clouds to improve autonomous vehicle localization.
- Developed location and navigation strategy and implemented algorithms for autonomous driving car project using C++, Python, ROS, and Laser Scanner technology.

- **Undergraduate Research Assistant**

Xidian University   *06/2015 – 07/2016*

- **Investigated Event-Related Potentials in Adolescent Smokers using MATLAB, EEGLAB, and Analyzer for data processing, analysis, evaluation, and report writing as part of an undergraduate final year project.**

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PUBLICATIONS AND MANUSCRIPTS IN PROGESS

- Liu,Y., **Song, M.**, Wu, H.F., Zeltner, N., Kipreos, E.T., Kner, P. Structured Illumination Single-Objective SPIM (SISO-SPIM), Manuscript in preparation.
- Liu,Y., Liu, B., Green, J., Duffy, C., **Song, M.**, Lauderdale, J.D., Kner, P. Volumetric Light Sheet Imaging with Adaptive Optics Correction, Manuscript in processing.

CONFERENCE PROCEEDINGS AND PRESENTATIONS

- **Song, M.**, Liu, Y., Liu. B., Kner, P. (February 1, 2023), Spatially varying PSF estimation and deconvolution for lightsheet microscope with electrical tunable lens using Deep Learning, SPIE Photonics West, San Francisco, CA
- Liu, Y., **Song, M.**, Kner, P. (February 1, 2023), Single Objective Light Sheet microscopy with multidirectional excitation and structured light, SPIE Photonics West, San Francisco, CA
- Peters T, Brenner C, **Song M**. Improving deep learning based semantic segmentation with multi view outliner correction[J]. ISPRS Archives; 43, B2, 2020, 43(B2): 711-716.

ACADEMIC CONTESTS

RoboCup@work Competition *10/2017 – 02/2019*

- ***Duties:*** served as the Algorithm developer, Programmer; developed Robot in ROS framework with C++ and Python; developed algorithms for vision tasks, includes barrier detection and workpiece recognition etc.
- ***Achievement***: 6th place in RoboCup German Open 2018 (Magdeburg, Germany); 5th place in RoboCup 2018 (Montreal, Canada)

Micro-MRI Based Verification System for Circulating Tumor Cell *07/2014 – 11/2015*

- ***Duties***: served as the project leader; supervised the project progress; optimized system
- ***Achievement***: Excellence Award in National Undergraduate Innovation Program (Ratio: 4/366); Grand Prize in the 27th Xidian University "Spark Cup" Extracurricular Scientific and Technological Works Contest (Ratio: 9/3298)

Design of Smart Vehicle Based on Surface EMG Control *08/2014 – 11/2014*

- ***Duties***: served as the project leader; programed with Microcontroller; designed the System
- ***Achievement***: First Prize in the 26th Xidian University "Spark Cup" Extracurricular Scientific and Technological Works Contest (Ratio: 100/3156)

EMPLOYMENT EXPERIENCE

University of Georgia, Advanced Imaging Laboratory (Advisor: Dr. Peter Kner) *01/2022 – Present*

- *Served as a research assistant,* support research project includes microscope construction, imaging, sample preparation, data analysis and programming.

Shenzhen Research Institute of Big Data at CUHK(Shenzhen) *08/2020 – 11/2020*

- *Served as a research assistant,* support research project includes data collection, data labeling, algorithm implementation and result optimization.

Institute of Cartography and Geoinformatics at Leibniz University Hanover *12/2017 – 09/2018*

- *Served as a research assistant,* support research project includes data labeling, label tool programming and helping with optimization of results

International Office of Leibniz University Hanover *07/2017 – 09/2019*

- *Served as a student assistant in Asia Department,* support international student affairs

LEADERSHIP & VOLUNTEER EXPERIENCES

University of Georgia

➢ **President of SPIE UGA Chapter** *05/2022 – Present*

- o Plan and coordinate events, guest speakers, outreach and information sessions, etc. for the group.

Leibniz University Hannover

➢ **Director of Hannover Chinese Students and Scholars Association**   *06/2016 – 06/2018*

- o Planned and coordinated various events, including festivals, sports competitions, and career fairs.
- o Organized voluntary interpreters in international exhibitions.

Xidian University

➢ **Secretary of Youth League Committee, School of Life Science & Technology**   *11/2012 – 06/2015*

- o Organized the school's welcome events and directed several summer social practices, international cultural festivals, and chorus festivals.

HONORS & AWARDS

o Honor Roll, Leibniz University Hannover	*10/2019*
o Honor Roll, Xidian University	*07/2016*
o Pacemaker to Merit Student, Xidian University (Ratio: 12/5107)	*07/2016*
o Outstanding Graduates, Xidian University (Ratio: 30/5107)	*07/2016*
o Outstanding Student Leader, Xidian University (Ratio: 25/5107)	*07/2016*
o Special Grade Scholarship, Xidian University (Ratio: 2/391)	*09/2015*
o Outstanding Student (for two times), Xidian University (Ratio: 80/5107)	*07/2014; 06/2015*
o Third-class Scholarship, Xidian University (Ratio: 40/391)	*09/2014*
o Advanced Individual in Social Practice, Xidian University	*11/2013*