

Sing Chun LEE



ABOUT ME

My passion led me to study Mathematics, Biomedical Computing, and Computer Science on three continents. I grew up in Asia, received my master in Europe, and currently finishing my Ph.D. in the USA. Each culture I lived in shaped who I am today. My research interest includes image processing, augmented reality, and geometry processing. I devoted myself largely to teaching during my Ph.D., and the University recognized the effort, earning me Professor Joel Dean Excellence in Teaching Award. Following my passion, I am currently an Assistant Professor at Bucknell University.

EDUCATION

JOHNS HOPKINS UNIVERSITY	BALTIMORE, MD, USA
<i>Dissertation: Hierarchical Gradient-Domain Vector Field Processing</i>	
Ph.D. Computer Science	2016–2023
M.Sc. Computer Science (GPA: 4.00)	2016–2017
TECHNISCHE UNIVERSITÄT MÜNCHEN	MUNICH, BAVARIA, GERMANY
<i>Thesis: Integration of RGBD Camera and Mobile C-arms – Calibration, Accuracy, and Applications</i>	
M.Sc. Biomedical Computing (GPA: 3.67)	2013–2016
THE CHINESE UNIVERSITY OF HONG KONG	HONG KONG
<i>Final-Year-Project: Image Upsampling via Tight Frames</i>	
B.Eng. Information Engineering (GPA: 3.65)	2006–2010
B.Sc. Mathematics (GPA: 3.51)	2006–2009

TEACHING EXPERIENCE

JOHNS HOPKINS UNIVERSITY	BALTIMORE, MD, USA
<ul style="list-style-type: none">Intermediate Programming (Fall 2020, Spring 2020, Spring 2021, Summer 2021)HEART: Polygon Mesh Processing (Fall 2019, Fall 2021)HEART: Geometric Computing and Its Applications (Fall 2020)Application of Augmented Reality (Spring 2023)Augmented Reality (Spring 2017, 2018, 2019, 2022)Computer Graphics (Fall 2018, 2022)Computer Vision (Fall 2021)	Co-instructor Instructor Instructor Teaching assistant Teaching assistant Teaching assistant Teaching assistant
TECHNISCHE UNIVERSITÄT MÜNCHEN	MUNICH, BAVARIA, GERMANY
<ul style="list-style-type: none">Patterns in Software Engineering (Winter 2013)	Course ssistant

WORK EXPERIENCE

BUCKNELL UNIVERSITY	LEWISBURG, PA, USA
Assistant Professor	2023/08-Present
BALGRIST UNIVERSITY HOSPITAL	ZURICH, SWITZERLAND
Visiting Ph.D. Student	2019/06-2019/08
INTUITIVE SURGICAL INC.	SUNNYVALE, CA, USA
Computer Graphics and Visualization Software Engineer Intern	2017/05-2018/01

JOHNS HOPKINS UNIVERSITY Research Intern	BALTIMORE, MD, USA 2015/04–2015/12
MEDABILITY GMBH/NARVIS LAB Software Engineer	MUNICH, BAVARIA, GERMANY 2014/08–2015/03
HELMHOLTZ ZENTRUM MÜNCHEN Hilfswissenschaftler	MUNICH, BAVARIA, GERMANY 2014/08–2015/03
AZEUS SYSTEM LIMITED System Analyst	HONG KONG 2011/02–2013/07
ASM PACIFIC TECHNOLOGY LIMITED Computer Vision Engineer	HONG KONG 2010/05–2011/01

AWARDS

Professor Joel Dean Excellence in Teaching Award (2022)
 MICCAI workshop AECAI Best Paper Award (2017)
 NASA Space Apps Challenge/Hackathon Global Norminee (2016)

VOLUNTEERS

ExCamp (2021,2022) TReND(2022) Thread (2019,2020) SABES (2016,2017)

SELECTED PUBLICATIONS

- [FLW*19] FINK L., LEE S. C., WU J. Y., LIU X., SONG T., VELIKOVA Y., STAMMINGER M., NAVAB N., UNBERATH M.: Lumipath – towards real-time physically-based rendering on embedded devices. In *Medical Image Computing and Computer Assisted Intervention – MICCAI 2019* (Cham, 2019), Shen D., Liu T., Peters T. M., Staib L. H., Essert C., Zhou S., Yap P.-T., Khan A., (Eds.), Springer International Publishing, pp. 673–681. doi:10.1007/978-3-030-32254-0_75.
- [KLAk23] KOHLBRENNER M., LEE S. C., ALEXA M., KAZHDAN M.: Poisson Manifold Reconstruction - Beyond Co-dimension One. *Computer Graphics Forum* (2023). doi:10.1111/cgf.14907.
- [LFF*16] LEE S. C., FUERST B., FOTOUHI J., FISCHER M., OSGOOD G., NAVAB N.: Calibration of rgbd camera and cone-beam ct for 3d intra-operative mixed reality visualization. *International Journal of Computer Assisted Radiology and Surgery* 11, 6 (Jun 2016), 967–975. doi:10.1007/s11548-016-1396-1.
- [LFT*17] LEE S. C., FUERST B., TATENO K., JOHNSON A., FOTOUHI J., OSGOOD G., TOMBARI F., NAVAB N.: Multi-modal imaging, model-based tracking, and mixed reality visualisation for orthopaedic surgery. *Healthcare Technology Letters* 4, 5 (2017), 168–173. doi:10.1049/htl.2017.0066.
- [LK19] LEE S. C., KAZHDAN M.: Dense point-to-point correspondences between genus-zero shapes. *Computer Graphics Forum* 38, 5 (2019), 27–37. doi:10.1111/cgf.13787.
- [LSF*20] LEE S. C., SEIBOLD M., FÜRNSTAHL P., FARSHAD M., NAVAB N.: Pivot calibration concept for sensor attached mobile c-arms. In *Medical Imaging 2020: Image-Guided Procedures, Robotic Interventions, and Modeling* (2020), Fei B., Linte C. A., (Eds.), vol. 11315, International Society for Optics and Photonics, SPIE, p. 1131503. doi:10.1117/12.2547581.
- [WLZ*17] WANG Z., LEE S. C., ZHONG F., NAVARRO-ALARCON D., LIU Y.-H., DEGUET A., KAZANZIDES P., TAYLOR R. H.: Image-based trajectory tracking control of 4-dof laparoscopic instruments using a rotation distinguishing marker. *IEEE Robotics and Automation Letters* 2, 3 (2017), 1586–1592. doi:10.1109/LRA.2017.2676350.

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