

BINGJIE (JENNY) XU

Jenny.Xu@u.northwestern.edu

EDUCATION

Ph.D., Computer Science

Northwestern University

09/2018 - Present

Evanston, USA

B.S., Instrumentation Science and Opto-electronics Engineering

Beihang University

09/2014 - 06/2018

Beijing, China

Exchange, Computer and Electrical Engineering

Technical University of Munich

10/2016 - 04/2017

Munich, Germany

RESEARCH EXPERIENCE

Research Assistant, Center for Scientific Studies in the Arts (NUACCESS)

Northwestern University

10/2018 - Present

Evanston, USA

- First built a low-cost time-domain optical coherence tomography system at 2 μm for paintings
- Presented a protrusion detection algorithm for oil paintings using surface normal maps
- Redesigned and built a computed tomography scanning system for aged pine cones
- Developed radiometric and geometric calibration method for camera-display systems

Research Assistant, 3D Imaging and Measurement Lab

Beihang University

04/2017 - 06/2018

Beijing, China

- Developed a projector-defocusing rectification method for Fourier single-pixel imaging
- Developed an adaptive regional single-pixel imaging method based on the Fourier slice theorem

Research Assistant, Dynamic Human Robot Interaction Lab

Technical University of Munich

10/2016 - 02/2017

Munich, Germany

- Built a virtual scene environment and character models
- Implemented Visual Servoing with Kinect RGB-D camera

PUBLICATIONS

- **Xu, B.**, Willomitzer, F., Yeh, C., Li, F., Gupta, V., Tumblin, J., Walton, M. and Cossairt, O. (2019). 3D Surface Measurement and Analysis of Works of Art. In 2019 53rd Asilomar Conference on Signals, Systems, and Computers, 1779-1782.
- **Xu, B.**, He, K., Hao, P., Gao, J., Willomitzer, F., Katsaggelos, A. K., Tumblin, J. E. and Walton, M. S. (2019, July). Time-domain optical coherence tomography can measure artworks with high penetration and high resolution. In Optics for Arts, Architecture, and Archaeology VII (Vol. 11058, p. 110580M). International Society for Optics and Photonics.
- **Xu, B.**, Jiang, H., Zhao, H., Li, X. and Zhu, S. (2018). Projector-defocusing rectification for Fourier single-pixel imaging. Optics express, 26(4), 5005-5017.
- Jiang, H., Zhu, S., Zhao, H., **Xu, B.** and Li, X. (2017). Adaptive regional single-pixel imaging based on the Fourier slice theorem. Optics express, 25(13), 15118-15130.

CONFERENCE PRESENTATIONS

(invited) 3D surface measurement and analysis of works of art

ACSSC 2019

Time-domain optical coherence tomography for artworks

SPIE Optical Metrology 2019

AWARDS & SCHOLARSHIPS

NSF PIRE grant

2018 - Present

First Prize, Beihang University Fengru Cup

2018

Honorable Mentions, Contest of Mathematical Modelling

2017

Beihang University Outstanding Student Cadre

2015 & 2016

Guanghua Scholarship for outstanding students

2015

RELATED AREAS

Single Pixel Imaging, Photometric Stereo, Deflectometry, Optical Coherence Tomography, Computed Tomography, X-ray Fluorescence

PROGRAMMING SKILLS

C/C++, Python, Matlab, Julia, C#, Javascript, HTML, OpenGL, assembly