

Long Qian

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EDUCATION

Johns Hopkins University, Baltimore, US

Aug. 2015 - Jun. 2020 (expected)

- PhD candidate, Computer Science
- Advisors: Prof. Peter Kazanzides and Prof. Nassir Navab
- Laboratory for Computational Sensing and Robotics (LCSR)

Tsinghua University, Beijing, China

Aug. 2011 - Jul. 2015

- Bachelor of Engineering, Electronics Engineering, GPA: 3.91

Chinese University of Hong Kong, Hong Kong

Jun. 2018 - Sept. 2018

- Visiting scholar, T Stone Robotics Institute

INDUSTRIAL EXPERIENCE

Google Inc. Daydream VR, Software Development Engineer Intern, California

Jul. 2017 - Sept. 2017

Intuitive Surgical Inc., Applied Research Engineer Intern, California

Apr. 2017 - Jun. 2017

Accenture Inc., Data Analyst and Consultant Intern, Beijing

Oct. 2014 - Mar. 2015

PROFESSIONAL SKILLS

Expertise Area: Augmented Reality, Medical Robotics, Computer Vision, Real-Time Systems, Deep Learning

Programming Language: C/C++, Python, C#, Java, Javascript, Matlab, Latex, Verilog, Solidity, Shell etc.

Packages: OpenCV, PyTorch, FFmpeg, ROS, Boost, Eigen, ARToolKit, QT, .NET etc.

Software: Unity, Unreal Engine, Visual Studio, Linux, ROS, Microsoft Office, Solidworks etc.

Language: Chinese (Native), English (Fluent), Spanish (Limited, DELE A2)

CODE SAMPLES

HoloLensARToolKit — <https://github.com/qian256/HoloLensARToolKit>

- Fiducial tracking based on the front-facing camera of HoloLens
- Achieves low-latency 30-fps tracking with the widest field-of-view (1344×768)

dVRK-XR — <https://github.com/jhu-dvrk/dvrk-xr>

- Mixed-reality extension to da Vinci Research Kit (dVRK)
- Real-time communication between a robot and a mixed reality client
- Facilitates mixed reality research in the medical robotics community

SELECTED PUBLICATIONS

For a full list of publications, please refer to [Google Scholar](#).

1. **Long Qian**, Jie Ying Wu, Simon DiMaio, Nassir Navab, Peter Kazanzides, "A Review of Augmented Reality in Robotic-Assisted Surgery," accepted to *IEEE Transactions on Medical Robotics and Bionics (TMRB)*.
2. **Long Qian**, Xiran Zhang, Anton Deguet, Peter Kazanzides, "ARAMIS: Augmented Reality Assistance for Minimally Invasive Surgery Using a Head-Mounted Display," *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, pp. 74-82. Springer. 2019 [**Oral Presentation**]
3. **Long Qian**, Anton Deguet, Peter Kazanzides, "dVRK-XR: Mixed Reality Extension for da Vinci Research Kit," *Hamlyn Symposium on Medical Robotics (HSMR)*, pp. 93-94. 2019. [**Best Paper Award, Second Place**]
4. **Long Qian**, Anton Deguet, Zerui Wang, Yun-hui Liu, Peter Kazanzides, "Augmented Reality Assisted Instrument Insertion and Tool Manipulation for the First Assistant in Robotic Surgery," *IEEE International Conference on Robotics and Automation (ICRA)*, pp. 5173-5179. IEEE. 2019.

5. **Long Qian**, Alexander Plopski, Nassir Navab, Peter Kazanzides, "Restoring the Awareness in the Occluded Visual Field for Optical See-Through Head-Mounted Displays," *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, Volume 24, Issue 11, pp. 2936-2946. IEEE. 2018.
6. **Long Qian**, Anton Deguet, Peter Kazanzides, "ARssist: Augmented Reality on a Head-Mounted Display for the First Assistant in Robotic Surgery," *Healthcare Technology Letters (HTL)*, Volume 5, Issue 5, pp. 194-200. IET. 2018. **[Outstanding Paper Award]**
7. **Long Qian**, Alexander Barthel, Alex Johnson, Greg Osgood, Peter Kazanzides, Nassir Navab, Bernhard Fuerst, "Comparison of Optical See-Through Head-Mounted Displays for Surgical Interventions with Object-Anchored 2D-Display," *International Journal of Computer Assisted Radiology and Surgery (IJCARS)*, Volume 12, Issue 6, pp. 901-910. Springer. 2017.
8. **Long Qian**, Ehsan Azimi, Nassir Navab, Peter Kazanzides, "Alignment of the Virtual Scene to the Tracking Space of a Mixed Reality Head-Mounted Display," *arXiv 1703.05834*. 2017.
9. Ehsan Azimi, **Long Qian**, Peter Kazanzides, Nassir Navab, "Robust Optical See-Through Head-Mounted Display Calibration: Taking Anisotropic Nature of User Interaction Errors into Account," *IEEE Virtual Reality (VR)*, pp. 219-220. IEEE. 2017. **[Best Poster Award, Honorable Mention]**
10. **Long Qian**, Zihan Chen, Peter Kazanzides, "An Ethernet to FireWire Bridge for Real-Time Control of the da Vinci Research Kit (dVRK)," *IEEE Conference on Emerging Technologies & Factory Automation (ETFA)*, pp. 1-7. IEEE. 2015.

PROFESSIONAL SERVICE

- Reviewer for *IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*
- Reviewer for *IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*
- Reviewer for *IEEE International Conference on Robotics and Automation (ICRA)*
- Reviewer for *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
- Reviewer for *International Journal of Computer Assisted Radiology and Surgery (IJCARS)*

TEACHING EXPERIENCE

Augmented Reality, EN.601.454/654 by Prof. Nassir Navab

- Guest Lecturer on "Head-Mounted Display"
- Project Supervisor

Spring 2019, 2018
Spring 2019, 2018, 2017

Computer-Integrated Surgery II, EN.601.456/656 by Prof. Russel Taylor

- Project Supervisor

Spring 2019, 2018

Robot Devices, Kinematics, Dynamics, and Control, ME.530.646 by Prof. Noah Cowan

- Teaching Assistant

Fall 2016

Intro Programming for Scientists & Engineers, EN.600.112 by Prof. Joanne Selinski

- Teaching Assistant

Fall 2015

AWARDS AND HONORS

Audience Award, Medical Augmented Reality Summer School

Aug. 2019

MICCAI Graduate Student Travel Grant, MICCAI 2019

Aug. 2019

Intuitive Clinical Research Grant, Johns Hopkins University

Jul. 2019

Best Paper Award, Second Place, Hamlyn Symposium on Medical Robotics

Jun. 2019

Outstanding Paper Award, AE-CAI Workshop

Sept. 2018

Intuitive Technology Research Grant, Johns Hopkins University

Jan. 2018

Best Poster Award, Honorable Mention, IEEE Virtual Reality

Mar. 2017

Outstanding Graduate, Tsinghua University (Top 10%)

Sept. 2015

Meritorious Winner, Mathematical Contest in Modeling, COMAP

Apr. 2014

Freshmen Scholarship, Tsinghua University ("Gaokao" Top 10 in Shanghai)

Oct. 2012