Chen Feng

Curriculum Vitae (updated on 10/21/2019)

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Education

2015 **Ph.D.**, *The University of Michigan*, Ann Arbor, Civil Engineering.

2013 **M.Sc.**, *The University of Michigan*, Ann Arbor, Electrical Engineering: Systems.
Specialization: Robotics and Computer Vision

2012 **M.Sc.**, *The University of Michigan*, Ann Arbor, Construction Engineering and Management.

2010 **B.E.**, *Wuhan University*, Wuhan, Geospatial Engineering.
Specialization: Photogrammetry and Remote Sensing

Appointments

2018–Present **Assistant Professor**, Civil and Urban Engineering, New York University.

2018–Present **Assistant Professor**, Mechanical and Aerospace Engineering, New York University.

2018–Present **Affiliated Faculty Member**, Center for Urban Science And Progress (CUSP), New York University.

2015–2018 **Research Scientist**, Computer Vision Group, Mitsubishi Electric Research Labs (MERL).

Publications (**29 conference papers, 15 journal articles, 7 patents, citations:1008, h-index:17 according to Google Scholar**)

Refereed Conference Papers (* highlights me as the corresponding author)

[C-29] 2019 Li Ding and **Chen Feng***. "DeepMapping: Unsupervised Map Estimation from Multiple Point Clouds". In: *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2019, pp. 8650–8659. (**oral presentation, acceptance rate<5.6%**).

[C-28] 2019 Wenjun Gui, Bingyu Li, Shuaihang Yuan, John-Ross Rizzo, Lakshay Sharma, **Chen Feng**, Anthony Tzes, and Yi Fang. "An Assistive Low-Vision Platform That Augments Spatial Cognition through Proprioceptive Guidance: Point-To-Tell-And-Touch". In: *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2019.

[C-27] 2019 Duanshun Li and **Chen Feng***. "Primitive Fitting Using Deep Boundary Aware Geometric Segmentation". In: *International Symposium on Automation and Robotics in Construction (ISARC)*. 2019. (equal contribution first author).

[C-26] 2019 Ruoyu Wang, Siyuan Xiang, **Chen Feng***, Pu Wang, Semiha Ergan, and Yi Fang. "Through-Wall Object Recognition and Pose Estimation". In: *International Symposium on Automation and Robotics in Construction (ISARC)*. Vol. 36. 2019, pp. 1176–1183.

[C-25]   2019   Siyuan Xiang, Ruoyu Wang, and **Chen Feng**[*]. "Towards Mobile Projective AR for Construction Co-Robots". In: *International Symposium on Automation and Robotics in Construction (ISARC)*. Vol. 36. 2019, pp. 1106–1113.

[C-24]   2018   Yiru Shen, **Chen Feng**[*], Yaoqing Yang, and Dong Tian. "Mining Point Cloud Local Structures by Kernel Correlation and Graph Pooling". In: *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Vol. 4. 2018. (equal contribution first author).

[C-23]   2018   Yaoqing Yang, **Chen Feng**[*], Yiru Shen, and Dong Tian. "FoldingNet: Point Cloud Auto-Encoder via Deep Grid Deformation". In: *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2018, pp. 206–215. (**spotlight presentation, acceptance rate<9%**).

[C-22]   2018   Xin Yu, Sagar Chaturvedi, **Chen Feng**, Yuichi Taguchi, Teng-Yok Lee, Clinton Fernandes, and Srikumar Ramalingam. "VLASE: Vehicle Localization by Aggregating Semantic Edges". In: *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2018, pp. 3196–3203.

[C-21]   2018   Zhiding Yu, Weiyang Liu, Yang Zou, **Chen Feng**, Srikumar Ramalingam, BVK Vijaya Kumar, and Jan Kautz. "Simultaneous Edge Alignment and Learning". In: *European Conference on Computer Vision (ECCV)*. 2018, pp. 388–404.

[C-20]   2017   Wim Abbeloos, Sergio Caccamo, Esra Ataer-Cansizoglu, Yuichi Taguchi, **Chen Feng**, and Teng-Yok Lee. "Detecting and Grouping Identical Objects for Region Proposal and Classification". In: *IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*. 2017, pp. 501–502.

[C-19]   2017   **Chen Feng**[*], Ming-Yu Liu, Chieh-Chi Kao, and Teng-Yok Lee. "Deep Active Learning for Civil Infrastructure Defect Detection and Classification". In: *Computing in Civil Engineering (2017)*. 2017, pp. 298–306.

[C-18]   2017   Carlos Jaramillo, Yuichi Taguchi, and **Chen Feng**. "Direct Multichannel Tracking". In: *International Conference on 3D Vision (3DV)*. 2017, pp. 347–355.

[C-17]   2017   Dong Tian, Hideaki Ochimizu, **Chen Feng**, Robert Cohen, and Anthony Vetro. "Geometric Distortion Metrics for Point Cloud Compression". In: *IEEE International Conference on Image Processing (ICIP)*. 2017, pp. 3460–3464.

[C-16]   2017   Zhiding Yu, **Chen Feng**, Ming-Yu Liu, and Srikumar Ramalingam. "CASENet: Deep Category-Aware Semantic Edge Detection". In: *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2017, pp. 5964–5973. (equal contribution first author).

[C-15]   2016   **Chen Feng**[*], Vineet R Kamat, and Carol C Menassa. "Marker-Assisted Structure from Motion for 3D Environment Modeling and Object Pose Estimation". In: *Construction Research Congress 2016*. 2016, pp. 2604–2613.

[C-14]   2015   **Chen Feng**[*], Suyang Dong, Kurt M. Lundeen, Yong Xiao, and Vineet R Kamat. "Vision-Based Articulated Machine Pose Estimation for Excavation Monitoring and Guidance". In: *International Symposium on Automation and Robotics in Construction (ISARC)*. 2015.

[C-13] 2015 Bharadwaj RK Mantha, **Chen Feng**, Carol C Menassa, and Vineet R Kamat. "Real-Time Building Energy and Comfort Parameter Data Collection Using Mobile Indoor Robots". In: *International Symposium on Automation and Robotics in Construction (ISARC)*. 2015.

[C-12] 2015 Yong Xiao, **Chen Feng**, Yuichi Taguchi, and Vineet R Kamat. "User-Guided Dimensional Analysis of Indoor Scenes Using Depth Sensors". In: *International Symposium on Automation and Robotics in Construction (ISARC)*. 2015, pp. 1–8.

[C-11] 2014 **Chen Feng**[*], Yuichi Taguchi, and Vineet R Kamat. "Fast Plane Extraction in Organized Point Clouds Using Agglomerative Hierarchical Clustering". In: *IEEE International Conference on Robotics and Automation (ICRA)*. 2014, pp. 6218–6225. (**48% acceptance rate among 2085 submissions**).

[C-10] 2014 **Chen Feng**[*], Yong Xiao, Aaron Willette, Wes McGee, and Vineet R Kamat. "Towards Autonomous Robotic In-Situ Assembly on Unstructured Construction Sites Using Monocular Vision". In: *International Symposium on Automation and Robotics in Construction (ISARC)*. 2014, pp. 163–170. (**Best Paper Award**).

[C-9] 2013 **Chen Feng**[*], Nicholas Fredricks, and Vineet R Kamat. "Human-Robot Integration for Pose Estimation and Semi-Autonomous Navigation on Unstructured Construction Sites". In: *International Symposium on Automation and Robotics in Construction (ISARC)*. 2013.

[C-8] 2013 Weiling Kang, **Chen Feng**, and Yijian Chen. "Mask Strategy and Layout Decomposition for Self-Aligned Quadruple Patterning". In: *Proc. SPIE*. Vol. 8684. 2013, 86840E.

[C-7] 2013 Carol C Menassa, Vineet R Kamat, SangHyun Lee, Elie Azar, **Chen Feng**, and Kyle Anderson. "Coupling Distributed Energy Simulation and Occupancy Models for Comprehensive Building Energy Consumption Analysis". In: *Computing in Civil Engineering (2013)*. ASCE. 2013, pp. 275–282.

[C-6] 2013 Yuichi Taguchi, Yong-Dian Jian, Srikumar Ramalingam, and **Chen Feng**. "Point-Plane SLAM for Hand-Held 3D Sensors". In: *IEEE International Conference on Robotics and Automation (ICRA)*. 2013, pp. 5182–5189. (**40% acceptance rate**).

[C-5] 2012 **Chen Feng**[*] and Vineet R Kamat. "Augmented Reality Markers as Spatial Indices for Indoor Mobile AECFM Applications". In: *International Conference on Construction Applications of Virtual Reality (ConVR)*. National Taiwan University Press, Taiwan. 2012, pp. 235–242.

[C-4] 2012 Yuichi Taguchi, Yong-Dian Jian, Srikumar Ramalingam, and **Chen Feng**. "SLAM Using Both Points and Planes for Hand-Held 3D Sensors". In: *International Symposium on Mixed and Augmented Reality (ISMAR)*. 2012.

[C-3] 2011 Suyang Dong, **Chen Feng**, and Vineet R Kamat. "Occlusion Handling Method for Ubiquitous Augmented Reality Using Reality Capture Technology and GLSL". In: *Computing in Civil Engineering (2011)*. 2011, pp. 494–503.

[C-2] 2010 **Chen Feng**[*], Fei Deng, and Vineet R Kamat. "Semi-Automatic 3D Reconstruction of Piecewise Planar Building Models from Single Image". In: *International Conference on Construction Applications of Virtual Reality (ConVR)*. 2010.

[C-1] 2009   Qian Yang, WenBin Shen, Junkun Wan, **Chen Feng**, and Jinling Wang. "Techniques for Extracting the Gravity Frequency Shift from GPS Signals to Determine the Orthometric Height". In: *International Global Navigation Satellite Systems Symposium*. 2009.

Refereed Journal Articles (* highlights me as the corresponding author)

[J-15] 2019 Ruoyu Wang, Shiheng Wang, Erdong Xiao, Kshitij Jindal, Wenzhen Yuan, and **Chen Feng***. "Real-time Soft Robot 3D Proprioception via Deep Vision-based Sensing". In: *arXiv preprint arXiv:1904.03820* (2019).

[J-14] 2018 **Chen Feng***, Vineet R Kamat, and Hubo Cai. "Camera Marker Networks for Articulated Machine Pose Estimation". In: *Automation in Construction* 96 (2018), pp. 148–160.

[J-13] 2017 Siheng Chen, Dong Tian, **Chen Feng**, Anthony Vetro, and Jelena Kovačević. "Fast Resampling of Three-Dimensional Point Clouds via Graphs". In: *IEEE Transactions on Signal Processing* 66.3 (2017), pp. 666–681.

[J-12] 2017 **Chen Feng*** and Yuichi Taguchi. "FasTFit: A Fast T-spline Fitting Algorithm". In: *Computer-Aided Design* 92 (2017), pp. 11–21.

[J-11] 2017 Yong Xiao, **Chen Feng**, Yuichi Taguchi, and Vineet R Kamat. "User-Guided Dimensional Analysis of Indoor Building Environments from Single Frames of RGB-D Sensors". In: *Journal of Computing in Civil Engineering* 31.4 (2017), p. 04017006.

[J-10] 2015 Ehsan Rezazadeh Azar, **Chen Feng**, and Vineet R Kamat. "Feasibility of In-Plane Articulation Monitoring of Excavator Arm Using Planar Marker Tracking". In: *Journal of Information Technology in Construction (ITcon)* 20.15 (2015), pp. 213–229.

[J-9] 2015 **Chen Feng***, Yong Xiao, Aaron Willette, Wes McGee, and Vineet R Kamat. "Vision Guided Autonomous Robotic Assembly and As-Built Scanning on Unstructured Construction Sites". In: *Automation in Construction* 59 (2015), pp. 128–138.

[J-8] 2013 Suyang Dong, Amir H Behzadan, **Feng Chen**, and Vineet R Kamat. "Collaborative Visualization of Engineering Processes Using Tabletop Augmented Reality". In: *Advances in Engineering Software* 55 (2013), pp. 45–55.

[J-7] 2013 Suyang Dong, **Chen Feng**, and Vineet R Kamat. "Sensitivity Analysis of Augmented Reality-Assisted Building Damage Reconnaissance Using Virtual Prototyping". In: *Automation in Construction* 33 (2013), pp. 24–36.

[J-6] 2013 **Chen Feng*** and Vineet R Kamat. "Plane Registration Leveraged by Global Constraints for Context-Aware AEC Applications". In: *Computer-Aided Civil and Infrastructure Engineering* 28.5 (2013), pp. 325–343.

[J-5] 2013 Carol C Menassa, Vineet R Kamat, SangHyun Lee, Elie Azar, **Chen Feng**, and Kyle Anderson. "Conceptual Framework to Optimize Building Energy Consumption by Coupling Distributed Energy Simulation and Occupancy Models". In: *Journal of Computing in Civil Engineering* 28.1 (2013), pp. 50–62.

[J-4] 2012 Suyang Dong, **Chen Feng**, and Vineet R Kamat. "Real-Time Occlusion Handling for Dynamic Augmented Reality Using Geometric Sensing and Graphical Shading". In: *Journal of Computing in Civil Engineering* 27.6 (2012), pp. 607–621.

[J-3] 2012   **Chen Feng**[*], Fei Deng, and Vineet R Kamat. "Rapid Geometric Modeling for Visual Simulation Using Semi-Automated Reconstruction from Single Image". In: *Engineering with Computers* (2012), pp. 31–39.

[J-2] 2012   **Chen Feng**[*] and Vineet R Kamat. "A Plane Tracker for Aec-Automation Applications". In: *Gerontechnology* 11.2 (2012), p. 83.

[J-1] 2008   Jingui Zou and **Chen Feng**[*]. "Search Algorithms for Least Independent Close Loops". In: *Geospatial Information (in Chinese)* 6 (2008), p. 034.

Patents (**5 granted**)

[P-7] 2017   **Chen Feng** and Yuichi Taguchi. "Fast T-spline Fitting System and Method". US Patent App. 15/469,840. Mar. 2017.

[P-6] 2017   **Chen Feng**, Yuichi Taguchi, Esra Cansizoglu, Srikumar Ramalingam, Khalid Yousif, and Haruyuki Iwama. "System and Method for Virtually-Augmented Visual Simultaneous Localization and Mapping". US Patent App. 15/444,601. Feb. 2017.

[P-5] 2017   **Chen Feng**, Zhiding Yu, and Srikumar Ramalingam. "Multi-Label Semantic Boundary Detection System". US Patent 10,410,353. May 2017.

[P-4] 2017   Haruyuki Iwama, **Chen Feng**, and Yuichi Taguchi. "Vehicle Automated Parking System and Method". US Patent 2018/0246515 A1. Feb. 2017.

[P-3] 2015   Yong Xiao, **Chen Feng**, Yuichi Taguchi, and Vineet R Kamat. "Method for Determining Dimensions in An Indoor Scene from A Single Depth Image". US Patent 9,761,015. Apr. 2015.

[P-2] 2013   **Chen Feng**, Yuichi Taguchi, and Vineet Kamat. "Method for Extracting Planes from 3D Point Cloud Sensor Data". US Patent 9,412,040 B2. Dec. 2013.

[P-1] 2012   Yuichi Taguchi, Srikumar Ramalingam, Yong-Dian Jian, and **Chen Feng**. "Method for Registering Points and Planes of 3D Data in Multiple Coordinate Systems". US Patent 9,183,631. June 2012.

Awards

2018   **Outstanding Reviewer for CVPR**, *The Conference on Computer Vision and Pattern Recognition (CVPR)*, Salt Lake City, Utah.

2016   **Recognition of Contributions to Mitsubishi Electric of Work on 3D Reconstruction for Elevator Replacement Business**, *Mitsubishi Electric Research Laboratories (MERL)*, Cambridge, Massachusetts.

2016   **Nominee of ProQuest Distinguished Dissertation Awards**, *Rackham Graduate School*, University of Michigan, Ann Arbor, (54 out of 800 grad students).

2015   **Rackham Pre-doctoral Fellowship**, *Rackham Graduate School*, University of Michigan, Ann Arbor, (72 out of 240 candidates).

2014   **Tishman Pre-doctoral Fellowship**, *Department of Civil and Environmental Engineering*, University of Michigan, Ann Arbor.

2014   **Student Travel Grant for IEEE ICRA**, *National Science Foundation (NSF)*, Hong Kong.

2013   **Rackham International Student Fellowship**, *Rackham Graduate School*, University of Michigan, Ann Arbor.

2012 **PARTNERBOT Award for General Contribution to Robotics**, *CLEARPATH Robotics*, (awarded to 10 out of nominated 150 robotics research groups from over the world).

2011 **Best Ph.D. Student Scholarship**, *International Computer Vision Summer School 2011: Registration, Recognition and Reconstruction in Images and Video*, Sicily, Italy, (awarded to 3 out of 120 Ph.D. students in the summer school from over the world).

2010 **C.E. Bottum and R. Harris Fellowship**, *Department of Civil and Environmental Engineering*, University of Michigan, Ann Arbor.

2009 **National Academician Xia Jianbai Award for Innovative Student**, *School of Geodesy and Geomatics*, Wuhan University, (awarded to 10 out of several thousands of eligible Geomatics students in China).

2008 **"Baidu Cup" Central/North China Collegiate Programming Contest, 1st class award**, Wuhan University.

2008 **Chinese Undergraduate Math Contest of Modeling, 1st class award in Hubei**, Wuhan University.

2007–2009 **Outstanding Student Scholarship**, *School of Geodesy and Geomatics*, Wuhan University.

Grants (**total funded: $1.37M, my share: 0.57M**)

Current

2019–2022 **CPS: Medium: Accurate and Efficient Collective Additive Manufacturing by Mobile Robots**, *National Science Foundation (NSF)*, $1,199,956, Role: Lead PI.

2019–2020 **Design of Resilient Smart Highway Systems with Data-Driven Monitoring from Networked Cameras**, *C2SMART*, $115,967, Role: Co-PI.

2019 **Gift Fund**, *Mitsubishi Electric Research Labs (MERL)*, $20,000, Role: PI.

Past

2018–2019 **De-constructing Urban Park Plazas for the Visually Impaired: An Approach to Optimize Navigation using an Advanced Wearable**, *NYC DOT*, $29,860, Role: Co-PI.

2013–2015 **UAV-based Civil Infrastructure Data Collection and Inspection**, *Rackham Graduate School, University of Michigan*, $3,000, Role: PI.

Participated In Proposal Writing

2014–2017 **Scalable and Autonomous Post-Event Subsurface Characterization from UAV-based Quantitative Surface Measurements**, *National Science Foundation (NSF)*, $389,845, Co-PI: Vineet R Kamat.

2013–2015 **PFI: AIR Technology Translation–Development and Evaluation of Field Prototype for Determining Excavator Proximity to Buried Utilities**, *National Science Foundation (NSF)*, $150,000, PI: Vineet R Kamat.

Invited Talks

2019   **Deep Learning on Point Clouds: From Paper Folding for Soft Robots to Unsupervised Robotic Mapping**.
- *NYU Courant Institute of Mathematical Sciences*, Manhattan, NY, September.
- *Jiangmen Technology Community*, Online, August.
- *Samsung Research Artificial Intelligence Center (SAIC)*, Manhattan, NY, July.
- *NVIDIA Research*, San Jose, CA, June.

2019   **Real-time Soft Robot 3D Proprioception via Deep Vision-based Sensing**, *Soft Robotics and Robot Learning Workshop*, Manhattan, NY, June.

2018   **Can Neural Networks Learn Paper Folding?**.
- NYU CUSP, Brooklyn, NY, February 2019.
- Google Brain, Manhattan, NY, January 2019.
- The City University of New York (CUNY), Manhattan, NY, October.
- Wayfair, Boston, MA, July.

2018   **Deep Learning on Point Clouds**, *CSAIL, MIT*, Cambridge, MA, May.

2016   **Marker-based Real-time Pose Estimation**, *ISARC Technical Tutorial Workshop*, Auburn, AL, July.

2016   **Camera Marker Networks for Pose Estimation and Scene Understanding in Construction Automation and Robotics**, *Department of Civil Engineering, Texas A&M University*, College Station, TX, April.

2014   **Fast Plane Extraction and Template Registration: Algorithm and Applications in Civil and Architectural Engineering**, *School of Geodesy and Geomatics, Wuhan University*, Wuhan, Hubei, China, July.

Teaching

2018–2019   **ME-GY 7863 C: Robot Perception**, *Department of Mechanical and Aerospace Engineering*, NYU Tandon, Brooklyn, NY.
- Developed the course.
- Taught graduate-level computer vision for robotics.
- Student evaluation: 4.6/5 (17 out of 19 students responded).
- Selected student feedbacks:
  - "Excellent instructor. Highly recommended."
  - "The topics covered in this course are really helpful for my research topic."
  - "Prof. Chen is one of the best Prof. NYU has. The way he engaged the whole class was outstanding. He answers the questions in the best way possible."

2019 Spring   **CE-GY 7963 A: Emerging Information and Automation Technologies**, *Department of Civil and Urban Engineering*, NYU Tandon, Brooklyn, NY.
- Developed the course.
- Taught introduction to photogrammetry/Lidar/Machine-Learning/AR/Robotics for civil engineering graduate students.
- Student evaluation: 4.9/5 (7 out of 9 students responded).
- Selected student feedbacks:
  - "The course was very inspiring and I learned a lot from it."
  - "Professor Feng is very energetic in his class. Really learnt something new and modern."
  - "Advisor has broad knowledge background and inspires a lot on the class."

2014 Winter	**CEE 501: Automation and Robotics in Construction**, *Department of Civil and Environmental Engineering*, University of Michigan, Ann Arbor, MI.
	○ Co-developed the course.
	○ Taught applications of vision and robotics in construction.
2013	**CEE 531: Construction Cost Engineering**, *Department of Civil and Environmental Engineering*, University of Michigan, Ann Arbor, MI.
	○ Taught topics such as learning curves and unit price proposal.
2011–2012	**CEE 539: Construction Management Information Systems**, *Department of Civil and Environmental Engineering*, University of Michigan, Ann Arbor, MI.
	○ Taught construction simulation in EZSTROBE, STROBOSCOPE, and VITASCOPE.

Professional Services

Workshop Organizer

2019	**Soft Robotics and Robot Learning Workshop**, *Annual New England Manipulation Symposium (NEMS)*, Manhattan, NY.
2016	**Computer Vision Algorithms and Tools for Construction Automation and Robotics**, *International Symposium on Automation and Robotics in Construction (ISARC)*, Auburn, AL.

Reviewer

2017–Present	IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
2018–Present	The European Conference on Computer Vision (ECCV)
2013–Present	IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
2014–Present	IEEE International Conference on Robotics and Automation (ICRA)
2016–Present	Journal of Automation in Construction (AUTCON)
2015–Present	Journal of Computing in Civil Engineering (JCCE)
2018–Present	International Symposium on Automation and Robotics in Construction (ISARC)
2017	IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
2017	International Workshop on Computing in Civil Engineering (IWCCE)
2015	International Conference on Construction Applications of Virtual Reality (CONVR)
2015–2016	IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)
2016	Journal of Image and Vision Computing (IMAVIS)
2016	Journal of Image and Vision Computing (IMAVIS)
2016	IEEE Transactions on Human-Machine Systems (THMS)
2016	Journal of Computer Assisted Surgery
2015	Journal of Robotics and Computer Integrated Manufacturing
2014	Advanced Engineering Informatics
2014	Visualization in Engineering
2013	IEEE International Conference on Automation Science and Engineering (CASE)

University Services

| 2019–Present | **Faculty-Engineer in Residence for Business Incubators**, *NYU Future Labs.* |
| 2019–Present | **Faculty Advisor for NYU Self Drive Team**, *NYU Multidisciplinary Undergraduate Vertically Integrated Project (VIP).* |

Mentored Graduate Students

Current Students at NYU

| Ph.D. Students | Ruoyu Wang, Siyuan Xiang, Xuchu Xu, Wenyu Han, Sunglyoung Kim |
| M.S. Students | Shiheng Wang, Kshitij Jindal |

Research Intern at MERL

| Ph.D. Students | Ding Li (University of Rochester), Yaoqing Yang (CMU), Yiru Shen (Clemson), Carlos Jaramillo (CUNY) |
| M.S. Students | Zhen Liu (Georgia Institute of Technology) |

Past Students at University of Michigan

| Ph.D. Students | Lichao Xu |
| M.S. Students | Civil Engineering: Yuhang Xu, Da Li, Yingqi Liu, Chao-Chung Yang; Robotics: Zhiyuan Zuo |

Open Source Software

2019	**DeepMapping**, A PyTorch implementation of for the corresponding CVPR'19 paper for unsupervised point cloud registration and mapping..
2018	**FoldingNet**, A Caffe implementation of the corresponding CVPR'18 paper for point cloud auto-encoder..
2018	**KCNet**, A Caffe implementation of the corresponding CVPR'18 paper for robust deep learning on point cloud..
2017	**CASENet**, A Caffe implementation of the corresponding CVPR'17 paper for multi-label semantic edge detection..
2016	**masfm**, A C++ library for marker-based pose estimation using structure from motion assisted with markers..
2015	**PEAC**, A C++ library with Matlab interface for extracting planar regions from organized point cloud in real-time..
2010–Present	**cv2cg**, A lightweight library with applications for computer vision, computer graphics and augmented reality interactions, including KEG tracker and AprilTag for robotics applications..

Technical Skills

Programming	C, C++, Matlab, Python, Java, C#, VBA, JavaScript, VCS (Hg, Git, SVN)
Library	PyTorch, OpenCV, Caffe, ROS, PCL, Ceres, LCM, OpenSceneGraph, OpenGL
Text Editing	TeX (LaTeX, BibTeX), MS Office
OS	MS Windows, Ubuntu Linux, Android