Junbang Liang

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Educational Background:

- **University of Maryland, College Park** Aug. 2018 - Jul. 2021
  - Ph.D. student in Department of Computer Science
- **University of North Carolina at Chapel Hill** Aug. 2016 - June 2018
  - Master's degree of Computer Science
  - 9/9 High Pass, equivalent to GPA 4.0/4.0
- **Tsinghua University** Sep. 2012 - Jul. 2016
  - Bachelor of Engineering in Department of Computer Science and Technology.
  - Overall GPA 3.8/4.0 (91/100), Total Credits 173, Rank 9/141.

Publications:

- Yi-Ling Qiao*, **Junbang Liang***, Vladlen Koltun, Ming C. Lin. *Differentiable Simulation of Soft Multi-Body Systems.* NeurIPS 2021
- Yi-Ling Qiao*, **Junbang Liang***, Vladlen Koltun, Ming C. Lin. *Efficient Differentiable Simulation of Articulated Bodies.* ICML 2021
- Tetsuya Takahashi, **Junbang Liang**, Yi-Ling Qiao, Ming C. Lin. *Differentiable Fluids with Solid Coupling for Learning and Control.* AAAI 2021
- **Junbang Liang**, Ming C. Lin, *Machine Learning for Digital Try-On: Challenges and Progress*, CVM 2020
- Yu Shen, **Junbang Liang**, Ming C. Lin. *GAN-based Garment Generation Using Sewing Pattern Images.* ECCV 2020
- Yi-Ling Qiao, **Junbang Liang**, Vladlen Koltun, Ming C. Lin. *Scalable Differentiable Physics for Learning and Control.* ICML 2020
- **Junbang Liang**, Ming C. Lin, *Differentiable Physics Simulation*, ICLR 2020 Workshop
- **Junbang Liang**, Ming C. Lin, *Machine Learning for Digital Try-On*, ICLR 2020 Workshop
- **Junbang Liang**, Ming C. Lin, Vladlen Koltun. *Differentiable Cloth Simulation for Inverse Problems.* NeurIPS 2019
- **Junbang Liang**, Ming C. Lin. *Shape-Aware Human Pose and Shape Reconstruction Using Multi-View Images.* ICCV 2019
- Shan Yang, **Junbang Liang**, Vladimir Jojic, Jun Lian, Ronald C. Chen, Ming C. Lin. *Reconstructing Tissue Properties From Medical Images With Application in Cancer Screening.* IEEE Transactions on Medical Robotics and Bionics, 2019
- **Junbang Liang**, Ming C. Lin. *Time-Domain Parallelization for Accelerating Cloth Simulation.* Symposium on Computer Animation, 2018
- Shan Yang, **Junbang Liang**, Ming C. Lin. *Learning-based Cloth Material Recovery from Video.* ICCV 2017
- Miao Wang, **Jun-Bang Liang**, Song-Hai Zhang, Shao-Ping Lu, Ariel Shamir, Shi-Min Hu. *Hyper-lapse from Multiple Spatially-overlapping Videos.* IEEE Transactions on Image Processing, 2017
- Miao Wang, Xi-Jin Zhang, **Jun-Bang Liang**, Song-Hai Zhang, Ralph R. Martin. *Comfort-driven Disparity Adjustment for Stereoscopic Video.* Computational Visual Media 2016

Research Experience:

- **Research Assistant in GAMMA lab** Aug. 2016 - Jul. 2021
  Advisor: Prof. Ming C. Lin
- **Research Intern in Lab of Computer Graphics, Tsinghua University** Apr. 2014 - Dec. 2016
  Advisor: Prof. Shi-Min Hu
- **Summer Internship in Robotic Institute, CMU** Jul. 2015 - Sep. 2015
  Advisor: Prof. Stelian Coros

Technical Experience:

- **Applied Scientist II, Amazon** Jul. 2021 - Present
- **Applied Scientist Intern, Amazon** May. 2020 - Aug. 2020
  - Developed a new network structure for T-shirt drapes prediction.
- **Research Intern, Facebook Reality Lab** May. 2019 - Aug. 2019
  - Developed a new network structure for human texture completion.
  - Made use of the Spatial Transfer Network and Render-and-Compare technique to enforce the preservation of observed texture.
- **Software Engineering Intern, Google Inc** May. 2018 - Aug. 2018

- Applied a reinforcement learning algorithm for dynamic work balancing in Google Cloud Services.
- Used Deep Deterministic Policy Gradient for learning and outperforms the previous algorithm by 39% in the testing dataset.

- **Software Engineering Intern, Google Inc** May. 2017 - Aug. 2017
  - Trained an attention-based OCR neural network model to extract content of interest in an image.
  - Integrated two separate neural network models to an end-to-end trainable model to detect region of interest and decode characters at the same time.

Competition Experience:

- **Student Cluster Competition** Nov. 2015
  - Optimized the Repast HPC Application by buffering at the bottleneck function, achieving a speedup of 10%. Visualized the output of the zombie invasion model by self-coded python and coffee scripts. Optimized the HPCG benchmark by tuning size parameters and modifying its detail implementation, the result of which reached 207 Gflops with restricted memory use and cache misses.
- **SIGMOD Contest** May. 2014
  - Competed in SIGMOD Contest 2014 as a member of Team *blxlrsmb*, Tsinghua University. Solved one out of four problems using Bilateral Breadth First Search and indexing.

Competition Awards:

- **Overall Champion in Student Cluster Competition(SC15)** 2015
- **Rank 5 in SIGMOD contest** 2014
- **Rank 22 (Silver medal) in ACM/ICPC Chengdu Regional** 2013
- **Rank 7 (Gold medal) in National Olympiad in Informatics, 2011 (NOI 2011)** 2011

Scholarships:

- **Google Excellence Scholarship** 2015
- **ST Engineering China Scholarship** 2014, 2015
- **Tsinghua & Tung OOCL Scholarship** 2013
- **Tsinghua Freshman Scholarship** 2012

Programming Skills:

- Familiar with in C/C++, Python, Java, Pascal, Ruby and Javascript
- Proficient in basic data structures and algorithms. Topcoder rating is 1649. Codeforces rating is 2020.