JIONG CHEN

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About me

I am currently a postdoctoral researcher at Ecole Polytechnique. I received my Ph.D. degree in computer science from Zhejiang University in 2020, supervised by Prof. Jin Huang. My research interest lies in both *physically based simulation* and *geometry processing,* especially on multiscale analysis, efficient algorithms for PDE solving and their vast applications.

Education

Xidian University	Xi'an, China
Bachelor of Software Engineering	*2010 – 2014*

- Thesis title: **Geometric Deformation of Elastic Shells and Deformable Bodies**

Zhejiang University	Hangzhou, China
Ph.D. in Computer Science	*2014 – 2020*

- Thesis title: **Numerical Homogeneization for Heterogeneous Elasticity Simulation**

Work Experience

Postdoctoral Researcher	Sep 2022 – Present
Ecole Polytechnique, IP Paris	*Palaiseau, France*

- Working with Prof. Marie-Paule Cani on real-time simulation.

ATER Postdoctoral Fellow	Sep 2021 – Aug 2022
Telecom Paris, IP Paris	*Palaiseau, France*

- Worked with Prof. Kiwon Um on learning-based fluid simulation.

Postdoctoral Fellow	May 2021 – Aug 2021
Inria Saclay	*Palaiseau, France*

- Worked with Prof. Mathieu Desbrun on numerical homogenization.

Research Assistant	Oct 2020 – Apr 2021
Zhejiang University	*Hangzhou, China*

- Worked with Prof. Jin Huang on surface reconstruction and nonlinear optimization.

Research Visits

Visiting Student	Nov 2018 – Mar 2019
Caltech	*Pasadena, CA, USA*

- Worked with Prof. Mathieu Desbrun and Prof. Houman Owhadi on wavelet-based homogenization and r-adaptive methods.

Research Assistant	Mar 2016 – May 2016
The Chinese University of Hong Kong	*Shatin, Hongkong*

- Worked with Prof. Hanqiu Sun on cloth animation.

Preprints and Publications

- **Fast GPU-Based Two-Way Continuous Collision Handling**
  Tianyu Wang, **Jiong Chen**, Dongping Li, Xiaowei Liu, Huamin Wang, Kun Zhou
  (ACM Transactions on Graphics, 2023)

- **Somigliana Coordinates: An Elasticity-derived Approach for Cage Deformation**
  Jiong Chen, Fernando de Goes, Mathieu Desbrun
  SIGGRAPH 2023 Conference Proceedings

- **Robust Pointset Denoising of Piecewise-Smooth Surfaces through Line Processes**
  Jiayi Wei, **Jiong Chen**, Pooran Memari, Damien Rohmer, Mathieu Desbrun
  Computer Graphics Forum (Eurographics 2023)

- **3D Mesh Cutting for High Quality Atlas Packing**
  Shiyi Wang, **Jiong Chen**, Xifeng Gao, Hujun Bao, Jin Huang
  Computer Aided Geometric Design, 2022

- *Go Green*: **General Regularized Green's Functions for Elasticity**
  Jiong Chen, Mathieu Desbrun
  SIGGRAPH 2022 Conference Proceedings

- **Multiscale Cholesky Preconditioning for Ill-conditioned Problems**
  Jiong Chen, Florian Schäfer, Jin Huang, Mathieu Desbrun
  ACM Transactions on Graphics (SIGGRAPH 2021)

- **Cosserat Rod with rh-Adaptive Discretization**
  Jiahao Wen, **Jiong Chen**, Nobuyuki Umetani, Hujun Bao, Jin Huang
  Computer Graphics Forum (Pacific Graphics 2020)

- **Material-adapted Refinable Basis Functions for Elasticity Simulation**
  Jiong Chen, Max Budninskiy, Houman Owhadi, Hujun Bao, Jin Huang, Mathieu Desbrun
  ACM Transactions on Graphics (SIGGRAPH ASIA 2019)

- **Numerical Coarsening using Discontinuous Shape Functions**
  Jiong Chen, Hujun Bao, Tianyu Wang, Mathieu Desbrun, Jin Huang
  ACM Transactions on Graphics (SIGGRAPH 2018)

- **Cloth Compression using Local Cylindrical Coordinates**
  Jiong Chen, Yicun Zheng, Ying Song, Hanqiu Sun, Hujun Bao, Jin Huang
  The Visual Computer (CGI 2017)

Professional activities

- **Reviewer**: SIGGRAPH, SIGGRAPH Asia, Eurographics, CGF, TVCG

Teaching

- **Teaching assistant**: IGR 201a, IGR 202, IG3DA 2021-2022 @ Telecom Paris

Award

- **First Place Best Paper Award**
  Journées Françaises d'Informatique Graphique, 2022

- **National Scholarship**
  Ministry of Education of the People's Republic of China, 2018

- **Outstanding Graduate Student Award**
  Xidian University, 2014

Skills

Computer Languages: C/C++, Python, Mathematica, Matlab
Languages: Chinese (native), English (fluent)