

# Zhiyang (Frank) Dou

🔗 [frank-zy-dou.github.io](https://frank-zy-dou.github.io)

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**Bio.** I am a Ph.D. candidate in Computer Graphics Group at the *University of Hong Kong*, supervised by *Prof. Wenping Wang* and *Prof. Taku Komura*. I received my B. Eng. degree with honors at *Shandong University*. My undergraduate research advisor is *Prof. Shiqing Xin*.

I am currently a visiting scholar in the Department of Computer and Information Science at the *University of Pennsylvania*.

**Research interests** : Character Animation, Geometric Modeling and Processing, Computer Graphics, Human Behavior Analysis.

## 🎓 Education

Aug 2020 – Present      Ph.D. in Computer Graphics, Computer Science, *The University of Hong Kong*.

Sep 2016 – June 2020    B.Eng in Computer Science Honours, Computer Science (Elite Program), *Shandong University*.

## 📖 Research Work

### Recent Preprints :

16. **Surf-D : High-Quality Surface Generation for Arbitrary Topologies using Diffusion Models**  
Zhengming Yu\*, **Zhiyang Dou\***, Xiaoxiao Long, Cheng Lin, Zekun Li, Yuan Liu, Norman Müller, Taku Komura, Marc Habermann, Christian Theobalt, Xin Li, Wenping Wang.  
Arxiv 2023.  
[\[Project Page\]](#)[\[Paper\]](#)[\[Code\]](#)
15. **EMDM : Efficient Motion Diffusion Model for Fast, High-Quality Human Motion Generation**  
Wenyang Zhou, **Zhiyang Dou**†, Zeyu Cao, Zhouyingcheng Liao, Jingbo Wang, Wenjia Wang, Yuan Liu, Taku Komura, Wenping Wang, Lingjie Liu.  
Arxiv 2023. († Project Lead)  
[\[Project Page\]](#)[\[Paper\]](#)[\[Code\]](#)
14. **TLControl : Trajectory and Language Control for Human Motion Synthesis**  
Weilin Wan, **Zhiyang Dou**, Taku Komura, Wenping Wang, Dinesh Jayaraman, Lingjie Liu.  
Arxiv 2023.  
[\[Project Page\]](#)[\[Paper\]](#)[\[Code\]](#)
13. **Disentangled Clothed Avatar Generation from Text Descriptions**  
Jionghao Wang, Yuan Liu, **Zhiyang Dou**, Zhengming Yu, Yongqing Liang, Xin Li, Wenping Wang, Rong Xie, Li Song.  
Arxiv 2023.  
[\[Project Page\]](#)[\[Paper\]](#)[\[Code\]](#)
12. **Wonder3D : Single Image to 3D using Cross-Domain Diffusion**  
Xiaoxiao Long\*, Yuanchen Guo\*, Cheng Lin, Yuan Liu, **Zhiyang Dou**, Lingjie Liu, Yuexin Ma, Song-Hai Zhang, Marc Habermann, Christian Theobalt, Wenping Wang.  
Arxiv 2023.  
[\[Project Page\]](#)[\[Paper\]](#)[\[Code\]](#)

### Accepted Papers :

11. **C-ASE : Learning Conditional Adversarial Skill Embeddings for Physics-based Characters**  
**Zhiyang Dou**, Xuelin Chen, Qingnan Fan, Taku Komura, Wenping Wang.  
SIGGRAPH Asia 2023.  
[\[Project Page\]](#)[\[Paper\]](#)[\[Video\]](#)
10. **TORÉ : Token Reduction for Efficient Human Mesh Recovery with Transformer**  
**Zhiyang Dou\***, Qingxuan Wu\*, Cheng Lin, Zeyu Cao, Qiangqiang Wu, Weilin Wan, Taku Komura, Wenping Wang.  
IEEE International Conference on Computer Vision (ICCV) 2023.  
[\[Project Page\]](#)[\[Paper\]](#)[\[Code\]](#)
9. **Globally Consistent Normal Orientation for Point Clouds by Regularizing the Winding-Number Field**  
Rui Xu, **Zhiyang Dou**, Ningna Wang, Shiqing Xin, Xiaohu Guo, Wenping Wang.  
ACM Transactions on Graphics. SIGGRAPH 2023.  
**SIGGRAPH 2023 Best Paper Award.**  
[\[Project Page\]](#)[\[Code\]](#)
8. **RFEPS : Reconstructing a Feature-line Equipped Polygonal Surface from Unoriented Point Cloud**  
Rui Xu, Zixiong Wang, **Zhiyang Dou**, Chen Zong, Shiqing Xin, Mingyan Jiang, Changhe Tu.  
ACM Transactions on Graphics. SIGGRAPH Asia 2022.  
[\[Project Page\]](#)[\[Code\]](#)

7. **Coverage Axis : Inner Point Selection for 3D Shape Skeletonization**  
Zhiyang Dou, Cheng Lin, Rui Xu, Lei Yang, Shiqing Xin, Taku Komura, Wenping Wang.  
Computer Graphics Forum. EUROGRAPHICS 2022.  
[Fast-Forward Attendees Award, 2nd Place.](#)  
[\[Project Page\]](#)[\[Code\]](#)
6. **Analysis of SARS-CoV-2 Transmission in Airports based on Real Human Close Contact Behaviors**  
Xueze Yang\*, Zhiyang Dou\*, Yuqing Ding, Boni Su, Hua Qian, Nan Zhang.  
Journal of Building Engineering (JOBE) 2023, IF=7.14.
5. **Popularization of High-Speed Railway Reduces the Infection Risk via Close Contact Route during Journey**  
Nan Zhang, Xiyue Liu, Shuyi Gao, Boni Su, Zhiyang Dou#.  
Sustainable Cities and Society (SCS), IF=11.7, 2023. #Corresponding Author.
4. **Student close contact behavior and COVID-19 transmission in China's classrooms**  
Yong Guo\*, Zhiyang Dou\*, Nan Zhang, Xiyue Liu, Boni Su, Yuguo Li, Yinping Zhang.  
PNAS Nexus, 2023.  
[Featured in a press release by EurekAlert.](#)  
[\[Project Page\]](#)[\[Paper\]](#)[\[Press Release\]](#)
3. **Close Contact Behaviors of University and School Students in 10 Typical Indoor Environments**  
Nan Zhang, Li Liu, Zhiyang Dou, Xiyue Liu, Xueze Yang, Yong Guo, Silan Gu, Yuguo Li, Hua Qian, Jianjian Wei.  
Journal of Hazardous Materials (JHM), IF=14.2, 2023.
2. **Real Close Contact Behavior-based COVID-19 Transmission and Interventions in Subway**  
Xiyue Liu\*, Zhiyang Dou\*, Lei Wang, Boni Su, Tianyi Jin, Yong Guo, Jianjian Wei, Nan Zhang.  
Journal of Hazardous Materials (JHM), IF=14.2, 2022.
1. **Top-Down Shape Abstraction Based on Greedy Pole Selection**  
Zhiyang Dou, Shiqing Xin, Rui Xu, Jian Xu, Yuanfeng Zhou, Shuangmin Chen, Wenping Wang, Xiuyang Zhao, Changhe Tu.  
IEEE Transactions on Visualization and Computer Graphics (TVCG), 2021.  
\*Equal contribution

## Research Experience

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- > Nov. 2023 - Nov. 2024 Visiting Scholar, [University of Pennsylvania](#).
- > Jul. 2023 - Nov. 2023 Research Intern, [Tencent Games](#).
- > Jun. 2023 - Jul. 2023 Visiting Scholar, [Beijing University of Technology \(BJUT\)](#).
- > Apr. 2022 - Jun. 2023 Research Intern, [Tencent AI Lab](#).
- > Jul. 2019 - Oct. 2019 Research Assistant, [The University of Hong Kong](#).
- > Mar. 2018 - Jun. 2019 Research Assistant (part-time), [Interdisciplinary Research Center \(IRC\)](#).

## Scholarships

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- > Oct 2020 Postgraduate Scholarship.
- > Oct 2019 National Scholarship (0.2%).
- > Oct 2018 National Scholarship (0.2%).
- > Dec 2018 Presidential Scholarship (top 30 at the University).

## Patents & Competitions

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- > [Patent] Method, Device and Process for Physics-based Motion Generation, 2023, Under Review.
- > [Patent] Method, Device and Process for Hand-to-Surface Contact Detection, 2023, Under Review.
- > [Patent] Method, Device and Process for Social Distancing, 2020, Patent CN202110334126.
- > Meritorious Winner, [International Mathematical Modeling Contest](#) : MCM, 2019.
- > Meritorious Winner, [International Mathematical Modeling Contest](#) : ICM, 2018.
- > National First Prize (1%), [National Collegiate Mathematical Modeling Contest](#), 2019.
- > National First Prize, Best Paper (8/38573), [National Collegiate Mathematical Modeling Contest](#), 2018.

## Services

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- > Reviewer Services : SIGGRAPH; SIGGRAPH ASIA; TVCG; TIP; ICCV; CVPR; GM, CAD (CADJ); CGI; ICONIP; FSDM; MLIS.
- > 2023 - 2024 Teaching Assistant of COMP3271 Computer Graphics.
- > 2022 - 2023 Teaching Assistant of COMP3362 Hands-on AI : Experimentation and Applications.
- > 2021 - 2022 Teaching Assistant of COMP3362 Hands-on AI : Experimentation and Applications.

- **2020 - 2021** Teaching Assistant of COMP2120 Computer organization.
- **2021 - 2022** Junior Resident Tutor at [Graduate House](#).
- **2018 - 2019** Co-founder of Open Interest Lab (IPLab) at SDU (By 2022, we have more than 120 members).

## ☰ Student Mentorship Experience

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*(Sorted alphabetically by last name)*

- Jamie Zeyu Cao, University of Cambridge (B.A), University of Cambridge (MSC).
- Andy Wenyang Zhou, University of Cambridge (B.A).
- Henry Douhan Wang, University of Cambridge (B.A).
- Peter Qingxuan Wu, University of Oxford (B.A), University of Pennsylvania (MSC).
- Rui Xu, Shandong University (B.Eng), Shandong University (M.Eng).
- Zhengming Yu, South China University of Technology (B.Eng), Texas A&M University (Ph.D).
- Zexin Lin, The Chinese University of Hong Kong, Shenzhen (B.Eng).
- Xiyue Liu, Beijing University of Technology (B.Eng), Beijing University of Technology (M.Eng).
- Xueze Yang, Beijing University of Technology (B.Eng), Beijing University of Technology (M.Eng).