

Chongyang Ma

CONTACT INFORMATION	ByteDance Inc. 1199 Coleman Ave San Jose, CA 95110, U.S.A.	<i>Mobile:</i> +1-(213)291-5442 <i>E-mail:</i> chongyangm@gmail.com <i>Homepage:</i> http://chongyangma.com/
RESEARCH INTERESTS	Computer Graphics and Computer Vision: deep generative models, image & video manipulation, human digitization, motion capture, face tracking, 3D understanding & reconstruction, physics-based simulation, data-driven animation, procedural modeling, digital geometry processing, and texture synthesis.	
EDUCATION	Tsinghua University , Beijing, China	
	Ph.D., Institute for Advanced Study, <ul style="list-style-type: none">• Major: Computer Science	Sep 2007 to Jul 2012
	B.S., Fundamental Science Class, <ul style="list-style-type: none">• Major: Mathematics and Physics	Sep 2004 to Jul 2007
	Tsinghua High School , Beijing, China	
	National Honored Science Class,	Sep 2001 to Aug 2004
WORK EXPERIENCE	ByteDance / TikTok Inc. , U.S.A.	
	<ul style="list-style-type: none">• Tech Lead Manager	Dec 2023 to present
	<ul style="list-style-type: none">◇ Manage the algorithm team developing compliance-ready video generation models for TikTok Social & Creation business.◇ Launched the viral <i>AI Mermaid</i> video effect, generating over 33 million posts to date.◇ Led the development of real-time GAN-based effects and optimized face tracking & computer vision modules powering TikTok's mobile AR features.	
	Kuaishou Technology , U.S.A.	
	<ul style="list-style-type: none">• Research Lead/Manager	Mar 2019 to Dec 2023
	<ul style="list-style-type: none">◇ Served as a core contributor and team manager, driving the development and optimization of GAN-based visual effects (first launched in Aug 2019) and diffusion-based image generation effects (first launched in Oct 2022) for the Creation business.◇ Led the algorithm team developing 3D digital human technologies and incubated several virtual influencer IPs.	
	Snap Inc. , U.S.A.	
	<ul style="list-style-type: none">• Senior Research Scientist• Senior Research Engineer• Research Engineer	Jun 2018 to Feb 2019 Nov 2017 to May 2018 Nov 2016 to Nov 2017
	<ul style="list-style-type: none">◇ Collaborated cross-functionally with Product, Design and AR teams to transition research prototypes into scalable consumer features.◇ Served as a core contributor to the development and launch of <i>Sky Filters</i>.	
	Activision Publishing, Inc. , U.S.A.	
	<ul style="list-style-type: none">• Senior Computer Vision Research Engineer	Jul 2015 to Nov 2016

University of Southern California, U.S.A.
• Postdoctoral Scholar in Geometric Capture Lab Oct 2013 to Jun 2015

The University of British Columbia, Canada
• Postdoctoral Fellow in IMAGER Laboratory Sep 2012 to Sep 2013

OTHER POSITIONS **Weta Digital, New Zealand**
• Research and Development Intern Jun 2014 to Aug 2014

INRIA Nancy Grand-Est, France
• Visiting student in ALICE team Aug 2011 to Feb 2012

Microsoft Research Asia, China
• Research Intern in Internet Graphics group Mar 2012 to Jul 2012
Apr 2008 to Aug 2011

- TECHNICAL REPORTS
- [1] Guofeng Zhang, Angtian Wang, Jacob Zhiyuan Fang, Liming Jiang, Haotian Yang, Bo Liu, Yiding Yang, Guang Chen, Longyin Wen, Alan Yuille, **Chongyang Ma**. 2025. “TGT: Text-Grounded Trajectories for Locally Controlled Video Generation”. arXiv:2510.15104.
 - [2] Yufan Deng, Xun Guo, Yuanyang Yin, Jacob Zhiyuan Fang, Yiding Yang, Yizhi Wang, Shenghai Yuan, Angtian Wang, Bo Liu, Haibin Huang, **Chongyang Ma**. 2025. “MAGREF: Masked Guidance for Any-Reference Video Generation”. arXiv:2505.23742.
 - [3] Angtian Wang, Haibin Huang, Jacob Zhiyuan Fang, Yiding Yang, **Chongyang Ma**. 2025. “ATI: Any Trajectory Instruction for Controllable Video Generation”. arXiv:2505.22944.
 - [4] Yufan Deng, Xun Guo, Yizhi Wang, Jacob Zhiyuan Fang, Angtian Wang, Shenghai Yuan, Yiding Yang, Bo Liu, Haibin Huang, **Chongyang Ma**. “CINEMA: Coherent Multi-Subject Video Generation via MLLM-Based Guidance”. arXiv:2503.10391.

PUBLICATIONS <https://scholar.google.com/citations?user=l-ZQfpQAAAAJ&hl=en>

- [1] Chi Wang, Junming Huang, Rong Zhang, Qi Wang, Haotian Yang, Pengfei Wan, Haibin Huang, **Chongyang Ma**, Weiwei Xu. 2025. “Physically Based Facial Texture Generation in the Wild”. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), accepted.
- [2] Yuxin Zhang, Minyan Luo, Weiming Dong, Xiao Yang, Haibin Huang, **Chongyang Ma**, Oliver Deussen, Tong-Yee Lee, Changsheng Xu. 2025. “IP-Prompter: Training-Free Theme-Specific Image Generation via Dynamic Visual Prompting”. ACM SIGGRAPH 2025 (conference paper track), 122:1–122:12.
- [3] Nisha Huang, Weiming Dong, Yuxin Zhang, Fan Tang, Ronghui Li, **Chongyang Ma**, Xiu Li, Tong-Yee Lee, Changsheng Xu. 2025. “CreativeSynth: Cross-Art-Attention for Artistic Image Synthesis with Multimodal Diffusion”. IEEE Transactions on Visualization and Computer Graphics (TVCG), Vol 31, Issue 10, 8425–8438.
- [4] Yuxin Zhang, Weiming Dong, Nisha Huang, Fan Tang, Haibin Huang, **Chongyang Ma**, Pengfei Wan, Tong-Yee Lee, Changsheng Xu. 2025. “MotionCrafter: Plug-and-play Motion Guidance for Diffusion Models”. IEEE Transactions on Visualization and Computer Graphics (TVCG), accepted.

- [5] Yi Zheng, **Chongyang Ma**, Kanle Shi, Haibin Huang, Jingwei Chen, Han Yan, XinYuan Huang. 2025. “Creative-Agent: A Creative Prototype Generation System Driven by Objectives and Key Results”. IEEE 28th International Conference on Computer Supported Cooperative Work in Design (CSCWD 2025), accepted.
- [6] Xun Guo, Yongxin He, Shan Zhang, Ting Zhang, Wanquan Feng, Haibin Huang, **Chongyang Ma**. 2024. “DeTeCtive: Detecting AI-generated Text via Multi-Level Contrastive Learning”. The Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS), 88320–88347.
- [7] Sifei Li, Weiming Dong, Yuxin Zhang, Fan Tang, **Chongyang Ma**, Oliver Deussen, Tong-Yee Lee, Changsheng Xu. 2024. “Dance-to-Music Generation with Encoder-based Textual Inversion”. ACM SIGGRAPH Asia 2024 (conference paper track), 135:1–135:11.
- [8] Yujian Zheng, Yuda Qiu, Leyang Jin, **Chongyang Ma**, Haibin Huang, Di Zhang, Pengfei Wan, Xiaoguang Han. 2024. “Towards Unified 3D Hair Reconstruction from Single-View Portraits”. ACM SIGGRAPH Asia 2024 (conference paper track), 114:1–114:11.
- [9] Sisi Dai, Wenhao Li, Haowen Sun, Haibin Huang, **Chongyang Ma**, Hui Huang, Kai Xu, Ruizhen Hu. 2024. “InterFusion: Text-Driven Generation of 3D Human-Object Interaction”. Proceedings of the 18th European Conference on Computer Vision (ECCV), 18–35.
- [10] Xun Guo*, Mingwu Zheng*, Liang Hou, Yuan Gao, Yufan Deng, Pengfei Wan, Di Zhang, Yufan Liu, Weiming Hu, Zhengjun Zha, Haibin Huang, **Chongyang Ma**. 2024. “I2V-Adapter: A General Image-to-Video Adapter for Diffusion Models”. ACM SIGGRAPH 2024 (conference paper track), 112:1–112:12.
- [11] Shiyuan Yang, Liang Hou, Haibin Huang, **Chongyang Ma**, Pengfei Wan, Di Zhang, Xiaodong Chen, Jing Liao. 2024. “Direct-a-Video: Customized Video Generation with User-Directed Camera Movement and Object Motion”. ACM SIGGRAPH 2024 (conference paper track), 113:1–113:12.
- [12] Haotian Yang, Mingwu Zheng, **Chongyang Ma**, Yu-Kun Lai, Pengfei Wan, Haibin Huang. 2024. “VRMM: A Volumetric Relightable Morphable Head Model”. ACM SIGGRAPH 2024 (conference paper track), 46:1–46:11.
- [13] Haowen Sun, Ruikun Zheng, Haibin Huang, **Chongyang Ma**, Hui Huang, Ruizhen Hu. 2024. “LGTM: Local-to-Global Text-Driven Human Motion Diffusion Model”. ACM SIGGRAPH 2024 (conference paper track), 66:1–66:9.
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- [15] Sifei Li, Yuxin Zhang, Fan Tang, **Chongyang Ma**, Weiming Dong, Changsheng Xu. 2024. “Music Style Transfer with Time-Varying Inversion of Diffusion Models”. Proceedings of the 38th AAAI Conference on Artificial Intelligence (AAAI), 547–555.
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- [17] Nisha Huang, Yuxin Zhang, Fan Tang, **Chongyang Ma**, Haibing Huang, Weiming Dong, Changsheng Xu. 2025. “DiffStyler: Controllable Dual Diffusion for Text-Driven

Image Stylization”. IEEE Transactions on Neural Networks and Learning Systems (TNNLS), Vol 36, Issue 2, 3370–3383.

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- [24] Gengxin Liu, Qian Sun, Haibin Huang, **Chongyang Ma**, Yulan Guo, Li Yi, Hui Huang, Ruizhen Hu. “Semi-Weakly Supervised Object Kinematic Motion Prediction”. 2023. Proceedings of the 36th IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 21726–21735.
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- [26] Yuxin Zhang, Nisha Huang, Fan Tang, Haibin Huang, **Chongyang Ma**, Weiming Dong, Changsheng Xu. “Inversion-Based Creativity Transfer with Diffusion Models”. 2023. Proceedings of the 36th IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 10146–10156.
- [27] Wuqin Liu, Minxuan Lin, Haibin Huang, **Chongyang Ma**, Yu Song, Weiming Dong, Changsheng Xu. 2023. “Emotion-Aware Music Driven Movie Montage”. Journal of Computer Science and Technology, Vol 38, Issue 3, 540–553.
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- [29] Moran Li, Haibin Huang, Yi Zheng, Mengtian Li, Nong Sang, **Chongyang Ma**. 2022. “Implicit Neural Deformation for Sparse-View Face Reconstruction”. *Computer Graphics Forum (Proceedings of Pacific Graphics 2022)*, Vol 41, Issue 7, 601–610.
- [30] Yiqin Zhao, **Chongyang Ma**, Haibin Huang, Tian Guo. 2022. “LitAR: Visually Coherent Lighting for Mobile Augmented Reality”. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, Vol 6, Issue 3, 153:1–153:29.
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- [32] Yuxin Zhang, Fan Tang, Weiming Dong, Haibin Huang, **Chongyang Ma**, Tong-Yee Lee, Changsheng Xu. 2022. “Domain Enhanced Arbitrary Image Style Transfer via Contrastive Learning”. *ACM SIGGRAPH 2022 (conference paper track)*, 12:1–12:8.
- [33] Yiqun Lin, Lichang Chen, Haibin Huang, **Chongyang Ma**, Xiaoguang Han, Shuguang Cui. 2024. “Task-Aware Sampling Layer for Point-Wise Analysis”. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, Vol 30, Issue 10, 6612–6624.
- [34] Xingyu Chen, Yufeng Liu, Yajiao Dong, Xiong Zhang, **Chongyang Ma**, Yanmin Xiong, Yuan Zhang, Xiaoyan Guo. 2022. “MobRecon: Mobile-Friendly Hand Mesh Reconstruction from Monocular Image”. *Proceedings of the 35th IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, 20544–20554.
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- [46] Xingjia Pan, Yuqiang Ren, Kekai Sheng, Weiming Dong, Haolei Yuan, Xiaowei Guo, **Chongyang Ma**, Changsheng Xu. 2020. “Dynamic Refinement Network for Oriented and Densely Packed Object Detection”. Proceedings of the 33rd IEEE International Conference on Computer Vision and Pattern Recognition (CVPR, **Oral Presentation**), 11207–11216.
- [47] Zaiwei Zhang, Zhenpei Yang, **Chongyang Ma**, Linjie Luo, Alexander Huth, Etienne Vouga, Qixing Huang. 2020. “Deep Generative Modeling for Scene Synthesis via Hybrid Representations”. ACM Transactions on Graphics (TOG, presented at SIGGRAPH 2020), Vol 39, Issue 2, 17:1–17:21.
- [48] Kekai Sheng, Weiming Dong, Menglei Chai, Guohui Wang, Peng Zhou, Feiyue Huang, Bao-Gang Hu, Rongrong Ji, **Chongyang Ma**. 2020. “Revisiting Image Aesthetic Assessment via Self-Supervised Feature Learning”. Proceedings of the 34th AAAI Conference on Artificial Intelligence (AAAI, **Spotlight Presentation**), 5709–5716.
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- [53] Ryota Natsume*, Shunsuke Saito*, Zeng Huang, Weikai Chen, **Chongyang Ma**, Hao Li, Shigeo Morishima. 2019. “SiCloPe: Silhouette-Based Clothed People”. Proceedings of the 32nd IEEE International Conference on Computer Vision and Pattern Recognition (CVPR, **Oral Presentation, Best Paper Award Finalist**), 4480–4490.

- [54] Seonghyeon Nam, **Chongyang Ma**, Menglei Chai, William Brendel, Ning Xu, Seon Joo Kim. 2019. “End-to-End Time-Lapse Video Synthesis from a Single Outdoor Image”. Proceedings of the 32nd IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 1409–1418.
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- [60] Jonathan Palacios, Lawrence Roy, Prashant Kumar, Chen-Yuan Hsu, Weikai Chen, **Chongyang Ma**, Li-Yi Wei, Eugene Zhang. 2017. “Tensor Field Design in Volumes”. ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2017), Vol 36, Issue 6, 188:1–188:15.
- [61] Alex Smith, Sven Pohle, Wan-Chun Ma, **Chongyang Ma**, Xian-Chun Wu, Yanbing Chen, Etienne Danvoye, Jorge Jimenez, Sanjit Patel, Mike Sanders, Cyrus A. Wilson. 2017. “Emotion Challenge: Building a New Photoreal Facial Pipeline for Games”. Proceedings of the Digital Production Symposium (DigiPro), 8:1–8:2.
- [62] Sema Berkiten, Maciej Halber, Justin Solomon, **Chongyang Ma**, Hao Li, Szymon Rusinkiewicz. 2017. “Learning Detail Transfer based on Geometric Features”. Computer Graphics Forum (Proceedings of Eurographics 2017, **Best Paper Award Honorable Mention**), Vol 36, Issue 2, 361–373.
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(* indicates joint first authors or equal contributions.)

DISSERTATION **Chongyang Ma**. 2012. “Modeling Geometric and Dynamic Details Based on Texture Exemplars”. PhD Thesis, Tsinghua University.

US PATENTS Co-inventor on 30+ U.S. patents (including multiple continuations granted between 2019–2025) covering video generation, diffusion and GAN based AR effects, 3D digital humans, and creative AI technologies. Selected granted patents include:

- [1] Xiao Li, Yibing Ma, **Chongyang Ma**. “Image Processing Method and Apparatus, Electronic Device, and Storage Medium”. US Patent 18/049,152 filed on Oct 24, 2022.
- [2] Peihong Hou, **Chongyang Ma**. “Hair Rendering Method and Apparatus, Electronic Device and Storage Medium”. US Patent 17/897,309 filed on Aug 29, 2022.

- [3] Oliver Dayun Liu, Mengtian Li, Yi Zheng, Haibin Huang, **Chongyang Ma**. “Methods and Apparatuses for Photorealistic Rendering of Images Using Machine Learning”. US Patent 17/478,733, filed on Sep 17, 2021.
- [4] **Chongyang Ma**, Zhenyang Liu. “Method and Electronic Device for Processing Images”. US Patent 11,403,789 granted on Aug 2, 2022.
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- [7] Linjie Luo, **Chongyang Ma**, Zehao Xue. “Scaled Perspective Zoom on Resource Constrained Devices”. US Patent 10,757,319 granted on Aug 25, 2020.
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TEACHING Co-Instructor, University of Southern California, Department of Computer Science
 CSCI 599: Digital Geometry Processing SS 2014
 CSCI 420: Computer Graphics FS 2014

STUDENT **ByteDance Inc.**, Intelligent Creation
 SUPERVISION Guofeng Zhang, summer research intern Jun 2025 to present
 Xiaoyan Cong, summer research intern Jun 2025 to present
 Yuming Gu, summer research intern May 2025 to present
 Yufan Deng, research intern Jun 2024 to Sep 2025

Xun Guo, research intern	Mar 2024 to Jun 2025
Kuaishou Technology, Y-tech	
Shiyuan Yang, research intern	Oct 2023 to Dec 2023
Nisha Huang, research intern	Nov 2022 to Jul 2023
Yiqin Zhao, research intern	Jan 2022 to Apr 2022
Jiafeng Liu, research intern	Sep 2021 to Jun 2023
Yuan Yao, research intern	Jun 2021 to Mar 2022
Siming Yan, summer research intern	Jun 2020 to Sep 2020
Haitao Yang, summer research intern	May 2020 to Aug 2020
Pengda Xiang, summer research intern	May 2020 to Aug 2020
Yuliang Xiu, summer research intern	May 2020 to Aug 2020
Jinghui Li, R&D intern	Feb 2020 to Nov 2020
Hang Jin, R&D intern	Feb 2020 to Aug 2020
Snap Inc., Research Team	
David Futschik, summer intern	Jun 2018 to Sep 2018
Davis Rempe, summer intern	Jun 2018 to Sep 2018
Tianye Li, summer intern	May 2018 to Aug 2018
Seonghyeon Nam, summer intern	May 2018 to Aug 2018
Daniel Ron, summer intern	May 2017 to Nov 2017
University of Southern California, Department of Computer Science	
Liwen Hu, MSc by July 2014, PhD since Aug 2014	Sep 2013 to Jun 2015

PROFESSIONAL
ACTIVITIES

Associate Editor

- Computer Animation and Virtual Worlds (CAVW) 2022–2025

Program Committee

- ACM SIGGRAPH Technical Papers 2024, 2025
- ACM SIGGRAPH Asia Technical Papers 2023, 2026
- International Conference on Computer-Aided Design and Computer Graphics (CAD/Graphics) 2025
- Computational Visual Media (CVM) 2023–2026
- Shape Modeling International (SMI) 2018–2025
- Computer Graphics International (CGI) 2023
- Computer Animation and Social Agents (CASA) 2017–2022
- ACM SIGGRAPH Asia Technical Briefs and Posters 2019
- ACM Symposium on Interactive 3D Graphics and Games (I3D) 2015–2018
- ACM/Eurographics Symposium on Computer Animation (SCA) 2015, 2016
- Pacific Graphics (PG) 2015, 2016

Paper Reviewer

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2019–2022, 2024
- IEEE International Conference on Computer Vision (ICCV) 2019, 2021, 2025
- European Conference on Computer Vision (ECCV) 2020, 2022
- AAAI Conference on Artificial Intelligence (AAAI) 2020–2022
- Neural Information Processing Systems (NeurIPS) 2020, 2021
- IEEE International Conference on Multimedia and Expo (ICME) 2019
- ACM SIGGRAPH 2013–2020, 2022, 2023
- ACM SIGGRAPH Asia 2013–2019, 2021, 2022, 2024, 2025
- Eurographics 2010, 2013–2018, 2020
- Pacific Graphics 2011, 2013, 2014, 2018
- Computer Graphics International (CGI) 2012
- CAD/Graphics 2013
- Asian Conference on Computer Vision (ACCV) 2016
- IEEE VR 2018
- ACM Transactions on Graphics
- IEEE Transactions on Image Processing
- IEEE Transactions on Visualization and Computer Graphics
- IEEE Computer Graphics and Applications
- Computer Graphics Forum (Wiley Blackwell)
- Computers & Graphics (Elsevier)
- Visual Informatics (Elsevier)
- The Visual Computer (Springer)
- Signal, Image and Video Processing (Springer)
- Journal of Computer Science and Technology (Springer)
- Journal of Electronic Imaging
- Journal of Computer Graphics Techniques

Industrial Editorial Board

- APSIPA Trans. on Information and Signal Processing (ATSIP) 2022–2024

Grant Reviewer

- Natural Sciences and Engineering Research Council of Canada (NSERC)

AWARDS

Microsoft Research Asia Fellowship, 2010

FILM CREDITS

The Hobbit: The Battle of the Five Armies (Weta Digital, Visual Effects), 2014

GAME CREDITS

Call of Duty: WWII (Activision), 2017
Call of Duty: Infinite Warfare (Activision), 2016
Call of Duty: Modern Warfare Remastered (Activision), 2016
Skylanders Battlecast (Activision), 2016

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