

Chongyang Ma

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| CONTACT INFORMATION | Snap Inc. 64 Market Street Venice, CA 90291, 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, motion capture, human digitization, face tracking, 3D reconstruction, data-driven animation, procedural modeling, digital geometry processing, texture synthesis. | |
| EDUCATION | Tsinghua University , Beijing, China | |
| | Ph.D., Institute for Advanced Study, <ul style="list-style-type: none">• Major: Computer Science• Adviser: Prof. Baining Guo | 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 |
| | High School attached to Tsinghua University , Beijing, China | |
| | National Honored Science Class, | Sep 2001 to Aug 2004 |
| WORK EXPERIENCE | Snap Inc. , U.S.A. <ul style="list-style-type: none">• Senior Research Scientist• Senior Research Engineer• Research Engineer | Jun 2017 to present Nov 2017 to May 2018 Nov 2016 to Nov 2017 |
| | 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. <ul style="list-style-type: none">• Postdoctoral Scholar in Geometric Capture Lab | Oct 2013 to Jun 2015 |
| | The University of British Columbia , Canada <ul style="list-style-type: none">• Postdoctoral Fellow in IMAGER Laboratory | Sep 2012 to Sep 2013 |
| OTHER POSITIONS | Weta Digital , New Zealand <ul style="list-style-type: none">• Research and Development Intern | Jun 2014 to Aug 2014 |
| | INRIA Nancy Grand-Est , France <ul style="list-style-type: none">• Visiting student in ALICE team | Aug 2011 to Feb 2012 |
| | Microsoft Research Asia , China <ul style="list-style-type: none">• Research Intern in Internet Graphics group | Mar 2012 to Jul 2012 Apr 2008 to Aug 2011 |
| PUBLICATIONS | [19] Fan Tang, Weiming Dong, Yiping Meng, Chongyang Ma , Fuzhang Wu, Xinrui Li and Tong-Yee Lee. 2018. "Image Retargetability". arXiv:1802.04392, 1–11. | |

- [18] Jonathan Palacios, Lawrence Roy, Prashant Kumar, Chen-Yuan Hsu, Weikai Chen, **Chongyang Ma**, Li-Yi Wei and 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.
- [17] Alex Smith, Sven Pohle, Wan-Chun Ma, **Chongyang Ma**, Xian-Chun Wu, Yanbing Chen, Etienne Danvoye, Jorge Jimenez, Sanjit Patel, Mike Sanders and 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.
- [16] Sema Berkiten, Maciej Halber, Justin Solomon, **Chongyang Ma**, Hao Li and 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.
- [15] Yong Zhang, Weiming Dong, **Chongyang Ma**, Xing Mei, Ke Li, Feiyue Huang, Bao-Gang Hu and Oliver Deussen. 2017. “Data-Driven Synthesis of Cartoon Faces Using Different Styles”. *IEEE Transactions on Image Processing (TIP)*, Vol 26, Issue 1, 464–478.
- [14] Wan-Chun Ma, Mathieu Lamarre, Etienne Danvoye, **Chongyang Ma**, Manny Ko and Cyrus Wilson. 2016. “Semantically-aware Blendshape Rigs from Facial Performance Measurements”. *SIGGRAPH Asia Technical Briefs*, 3:1–3:4.
- [13] Jonathan Palacios, **Chongyang Ma**, Weikai Chen, Li-Yi Wei and Eugene Zhang. 2016. “Tensor Field Design in Volumes”. *SIGGRAPH Asia Technical Briefs*, 18:1–18:4.
- [12] Yan Kong, Weiming Dong, Xing Mei, **Chongyang Ma**, Tong-Yee Lee, Siwei Lyu, Feiyue Huang and Xiaopeng Zhang. 2016. “Measuring and Predicting Visual Importance of Similar Objects”. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, Vol 22, Issue 12, 2564–2578.
- [11] Liwen Hu, **Chongyang Ma**, Linjie Luo and Hao Li. 2015. “Single-View Hair Modeling Using A Hairstyle Database”. *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2015)*, Vol 34, Issue 4, 125:1–125:9.
- [10] Hao Li, Laura Trutoiu, Kyle Olszewski, Lingyu Wei, Tristan Trutna, Pei-Lun Hsieh, Aaron Nicholls and **Chongyang Ma**. 2015. “Facial Performance Sensing Head-Mounted Display”. *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2015)*, Vol 34, Issue 4, 47:1–47:9.
- [9] Pei-Lun Hsieh, **Chongyang Ma**, Jihun Yu and Hao Li. 2015. “Unconstrained Realtime Facial Performance Capture”. *Proceedings of the 28th IEEE International Conference on Computer Vision and Pattern Recognition (CVPR 2015)*, 1675–1683.
- [8] Liwen Hu, **Chongyang Ma**, Linjie Luo, Li-Yi Wei and Hao Li. 2014. “Capturing Braided Hairstyles”. *ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2014)*, Vol 33, Issue 6, 225:1–225:9.
- [7] Liwen Hu, **Chongyang Ma**, Linjie Luo and Hao Li. 2014. “Robust Hair Capture Using Simulated Examples”. *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2014)*, Vol 33, Issue 4, 126:1–126:10.
- [6] **Chongyang Ma**, Haibin Huang, Alla Sheffer, Evangelos Kalogerakis and Rui Wang. 2014. “Analogy-Driven 3D Style Transfer”. *Computer Graphics Forum (Proceedings of Eurographics 2014)*, Vol 33, Issue 2, 175–184.

- [5] **Chongyang Ma**, Nicholas Vining, Sylvain Lefebvre and Alla Sheffer. 2014. “Game Level Layout from Design Specification”. Computer Graphics Forum (Proceedings of Eurographics 2014), Vol 33, Issue 2, 95–104.
- [4] **Chongyang Ma**, Li-Yi Wei, Sylvain Lefebvre and Xin Tong. 2013. “Dynamic Element Textures”. ACM Transactions on Graphics (Proceedings of SIGGRAPH 2013), Vol 32, Issue 4, 90:1–90:10.
- [3] **Chongyang Ma**, Li-Yi Wei and Xin Tong. 2011. “Discrete Element Textures”. ACM Transactions on Graphics (Proceedings of SIGGRAPH 2011), Vol 30, Issue 4, 62:1–62:10.
- [2] Baoquan Liu, Li-Yi Wei, Xu Yang, **Chongyang Ma**, Ying-Qing Xu, Baining Guo and Enhua Wu. 2011. “Non-Linear Beam Tracing on a GPU”. Computer Graphics Forum, Vol 30, Issue 8, 2156–2169.
- [1] **Chongyang Ma**, Li-Yi Wei, Baining Guo and Kun Zhou. 2009. “Motion Field Texture Synthesis”. ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2009), Vol 28, Issue 5, 110:1–110:8.

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

PATENTS 10 US patents filed in total. Selected list:

- [4] Wan-Chun Ma and **Chongyang Ma**. “Systems and Methods for Automating the Animation of Blendshape Rigs”. US Patent No. 15/299,916, filed Oct 21, 2016.
- [3] Wan-Chun Ma and **Chongyang Ma**. “Systems and Methods for Automating the Personalization of Blendshape Rigs Based on Performance Capture Data”. US Patent No. 15/299,882, filed Oct 21, 2016.
- [2] Li-Yi Wei, **Chongyang Ma** and Xin Tong. “Discrete Element Texture Synthesis”. US Patent 8698829, granted Apr 15, 2014.
- [1] Li-Yi Wei, **Chongyang Ma**, Baining Guo and Kun Zhou. “Motion Field Texture Synthesis”. US Patent 20110012910, filed Jul 15, 2009.

TEACHING Co-Instructor, University of Southern California, Department of Computer Science
 CSCI 599: Digital Geometry Processing SS 2014
 CSCI 420: Computer Graphics FS 2014

SUPERVISION **Snap Inc.**, Research Team

| | |
|-------------------------------|----------------------|
| Tianye Li, summer intern | May 2018 to present |
| Seonghyeon Nam, summer intern | May 2018 to present |
| Daniel Ron, summer intern | May 2017 to Nov 2017 |

University of Southern California, Department of Computer Science

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| Liwen Hu, MSc by July 2014, PhD since Aug 2014 | Sep 2013 to Jun 2015 |
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| PROFESSIONAL ACTIVITIES | <p>Program committee</p> <ul style="list-style-type: none"> • Shape Modeling International (SMI) 2018 • Computer Animation and Social Agents (CASA) 2017, 2018 • ACM Symposium on Interactive 3D Graphics and Games (I3D) 2015–2018 • ACM/Eurographics Symposium on Computer Animation (SCA) 2015, 2016 • Pacific Graphics 2015, 2016 <p>Paper reviewer</p> <ul style="list-style-type: none"> • ACM SIGGRAPH 2013–2018 • ACM SIGGRAPH Asia 2013–2017 • Eurographics 2010, 2013–2018 • Pacific Graphics 2011, 2013, 2014 • Computer Graphics International 2012 • CAD/Graphics 2013 • Asian Conference on Computer Vision (ACCV) 2016 • IEEE VR 2018 • ACM Transactions on Graphics • IEEE Transactions on Visualization and Computer Graphics • IEEE Computer Graphics and Applications • Computer Graphics Forum (Wiley Blackwell) • Computers & Graphics (Elsevier) • The Visual Computer (Springer) • Signal, Image and Video Processing (Springer) • Journal of Computer Science and Technology (Springer) • Journal of Electronic Imaging <p>Grant reviewer</p> <ul style="list-style-type: none"> • 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 | Skylanders Battlecast (Activision), 2016 Call of Duty: Infinite Warfare (Activision), 2016 Call of Duty: Modern Warfare Remastered (Activision), 2016 Call of Duty: WWII (Activision), 2017 |
| MEDIA REPORTS | <p>[14] Activision’s Virtual Human ‘Emotion Challenge’. <i>fxguide.com</i></p> <p>[13] Activision: A Photoreal Facial Performance Pipeline for Games. <i>80 level</i></p> <p>[12] Geometric Detail Transfer. <i>Two Minute Papers</i></p> <p>[11] Videos: the best of Siggraph 2015’s technical papers. <i>cgchannel.com</i></p> <p>[10] Performance driven facial animation. <i>fxguide.com</i></p> <p>[9] Oculus VR figures out how avatars can mimic your facial expressions. <i>engadget.com</i></p> <p>[8] Oculus can map your real-life expressions onto your VR avatar. <i>Wired</i></p> <p>[7] Sensors Bring You Face to Face with Your Virtual Reality Avatar. <i>vice.com</i></p> <p>[6] Oculus Rift hack transfers your facial expressions onto your virtual avatar. <i>Ars Technica</i></p> <p>[5] Oculus Rift Hack Transfers Your Facial Expressions onto Your Avatar. <i>MIT Tech. Review</i></p> |

- [4] **Oculus Rift teams with researchers to produce ability to capture and display facial expressions.** *TechXplore.com*
- [3] **Martin Breidt on the Uncanny Valley & Facial Tracking within a VR Head-Mounted Display by Oculus Research.** *Voices of VR Podcast*
- [2] **L'Oculus Rift reproduit maintenant les expressions faciales.** *Le Monde* (in French)
- [1] **Malen mit Zahlen.** *c't* 19/2011 (in German)

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