Yotam Gingold

CONTACT

Department of Computer Science
George Mason University
4400 University Drive MSN 4A5
Fairfax, VA 22030
USA

Computational Reality, Creativity and Graphics Lab (CraGL)

email: ygingold@gmu.edu
voice: +1-703-993-9196
web: https://cragl.cs.gmu.edu/

RESEARCH INTERESTS

Computer graphics, geometric modeling, interaction, design, creative tools, color, perception, human computation, crowdsourcing.

EDUCATION

New York University
Ph.D. in Computer Science (2009)
Thesis: 2D-Centric Interfaces and Algorithms for 3D Modeling
Advisor: Denis Zorin

New York University
M.Sc. equivalency in Computer Science (2005)
Qualifying exam topic: Topology for Computation
Advisor: Denis Zorin

Brown University
B.Sc. in Computer Science & Mathematics (2002)

EMPLOYMENT

George Mason University, Associate Professor	Fall 2018–present
Adobe Research, Visiting Professor	Fall 2019–Spring 2020
George Mason University, Assistant Professor	Fall 2012–Spring 2018
Columbia University/Rutgers University, Post-Doctoral Researcher Mentors: Eitan Grinspun, Andrew Nealen	Summer 2011–Summer 2012
Tel-Aviv University/Herzliya IDC, Post-Doctoral Researcher Mentors: Daniel Cohen-Or, Ariel Shamir	Feb. 2010–Summer 2011
JST ERATO Design UI Project, Visiting Researcher Mentor: Takeo Igarashi	Summer 2008
Adobe Systems Creative Technologies Lab, Research Intern Mentor: David Salesin	Summer 2006

Publications

Advisees in **bold**

Total Citations 1559*

* Google Scholar

H-Index 22*

Refereed Papers (top venues in field)

		Impact Factor	Accept Rate
1	**Jialin Huang**, Rana Hanocka, Alexa Siu, **Yotam Gingold**. 2023. ShapeSonic: Sonifying Fingertip Interactions for Non-Visual Virtual Shape Perception. *ACM SIGGRAPH Asia 2023 (Conference Papers)*.		
2	**Cheng-Kang Ted Chao**, **Jason Klein**, **Jianchao Tan**, Jose Echevarria, **Yotam Gingold**. 2023. ColorfulCurves: Palette-Aware Lightness Control and Color Editing via Sparse Optimization. *ACM Transactions on Graphics (TOG)* 42(4). Also in *Proceedings of SIGGRAPH North America 2023*.		21%
3	Zheng-Jun Du, Liang-Fu Kang, **Jianchao Tan**, **Yotam Gingold**, Kun Xu. 2023. Image vectorization and editing via linear gradient layer decomposition. *ACM Transactions on Graphics (TOG)* 42(4). Also in *Proceedings of SIGGRAPH North America 2023*.		21%
4	Xiaochun Tong, Hsueh-Ti Derek Liu, **Yotam Gingold**, Alec Jacobson. 2023. Differentiable Heightfield Path Tracing with Accelerated Discontinuities. *ACM SIGGRAPH North America 2023 (Conference Papers)*.		35%
5	**Yong Li**, Shoaib Kamil, Alec Jacobson, **Yotam Gingold**. 2021. H❤️rtDown: Document Processor for Executable Linear Algebra Papers. *ACM SIGGRAPH Asia 2022 (Conference Papers)*.		37%
6	**Chuan Yan**, John Joon Young Chung, Kiheon Yoon, **Yotam Gingold**, Eytan Adar, Sungsoo Ray Hong. 2022. FlatMagic: Improving Flat Colorization through AI-driven Design for Digital Comic Professionals. *ACM CHI Conference on Human Factors in Computing Systems*. (First round acceptance)		13%
7	**Yong Li**, Shoaib Kamil, Alec Jacobson, **Yotam Gingold**. 2021. I❤️LA: Compilable Markdown for Linear Algebra. *ACM Transactions on Graphics (TOG)* 40(6). Also in *Proceedings of SIGGRAPH Asia 2021*.	7.4	34%
8	**Xue Yu**, Stephen DiVerdi, Akshay Sharma, **Yotam Gingold**. 2021. ScaffoldSketch: Accurate Industrial Design Drawing in VR. *ACM Symposium on User Interface Software and Technology (UIST) 2021*.		26%
9	Zheng-Jun Du, Kai-Xiang Lei, Kun Xu, **Jianchao Tan**, **Yotam Gingold**. 2021. Video Recoloring via Spatial-Temporal Geometric Palettes. *ACM Transactions on Graphics (TOG)* 40(4). Also in *Proceedings of SIGGRAPH North America 2021*.	7.4	34%
10	**Chuan Yan**, David Vanderhaeghe, **Yotam Gingold**. 2020. A Benchmark for Rough Sketch Cleanup. *ACM Transactions on Graphics (TOG)* 39(6). Also in *Proceedings of SIGGRAPH Asia 2020*.	5.4	36%

11	**Jianchao Tan**, Jose Echevarria, **Yotam Gingold**. 2018. Efficient palette-based decomposition and recoloring of images via RGBXY-space geometry. *ACM Transactions on Graphics (TOG) 37*(6). Also in *Proceedings of SIGGRAPH Asia 2018.*	6.5	30%
12	**Songrun Liu**, **Zachary Ferguson**, Alec Jacobson, **Yotam Gingold**. 2017. Seamless: Seam erasure and seam-aware decoupling of shape from mesh resolution. *ACM Transactions on Graphics (TOG)* 36(6). Also in *Proceedings of SIGGRAPH Asia 2017.*	4.4	25%
13	Jiaxian Yao, Danny M. Kaufman, **Yotam Gingold**, Maneesh Agrawala. 2017. Interactive Design and Stability Analysis of Decorative Joinery for Furniture. *ACM Transactions on Graphics (TOG)* 36(2). Presented at *SIGGRAPH North America 2017*.	4.4	28%
14	**Jianchao Tan**, Jyh-Ming Lien, **Yotam Gingold**. 2017. Decomposing Images into Layers via RGB-space Geometry. *ACM Transactions on Graphics (TOG)* 36(1). Presented at *SIGGRAPH North America 2017*.	4.4	28%
15	Ming Jin, Daniel Gopstein, **Yotam Gingold**, Andrew Nealen. 2015. AniMesh: Interleaved Animation, Modeling, and Editing. *ACM Transactions on Graphics (TOG)* 34(6). Also in *Proceedings of SIGGRAPH Asia 2015*.	4.2	28%
16	**Jianchao Tan**, Marek Dvoroznak, Daniel Sykora, **Yotam Gingold**. 2015. Decomposing Time-Lapse Paintings into Layers. *ACM Transactions on Graphics (TOG)* 34(4). Also in *Proceedings of SIGGRAPH North America 2015*. **Invited for presentation** at *FMX 2016 Highlights of SIGGRAPH*.	4.2	25%
17	Guilin Liu, **Yotam Gingold**, Jyh-Ming Lien. 2015. Continuous Visibility Feature. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*.		28%
18	**Songrun Liu**, Alec Jacobson, **Yotam Gingold**. 2014. Skinning Cubic Bézier Splines and Catmull-Clark Subdivision Surfaces. *ACM Transactions on Graphics (TOG)* 33(6). Also in *Proceedings of SIGGRAPH Asia 2014*. **Adopted by Adobe Illustrator as the Puppet Warp tool.**	4.1	18%
19	Peter Borosan, Ming Jin, Doug DeCarlo, **Yotam Gingold**, Andrew Nealen. 2012. RigMesh: Automatic Rigging for Part-Based Shape Modeling and Deformation. *ACM Transactions on Graphics (TOG)* 31(6). Also in *Proceedings of SIGGRAPH Asia 2012*.	3.4	24%
20	**Yotam Gingold**, Ariel Shamir, Daniel Cohen-Or. 2012. Micro Perceptual Human Computation for Visual Tasks. *ACM Transactions on Graphics (TOG)* 31(5). Presented at *SIGGRAPH North America 2012*.	3.4	21%
21	**Yotam Gingold**, Denis Zorin, Takeo Igarashi. 2009. Structured Annotations for 2D-to-3D Modeling. *ACM Transactions on Graphics (TOG)* 28(5). Also in *Proceedings of SIGGRAPH Asia 2009*.	3.6	25%

22 **Yotam Gingold** and Denis Zorin. 2008. Shading-Based Surface Editing. *ACM Transactions on Graphics (TOG)* 27(3). Also in *Proceedings of SIGGRAPH North America 2008*. 3.4 17%

23 **Yotam I. Gingold**, Philip L. Davidson, Jefferson Y. Han, Denis Zorin. 2006. A Direct Texture Placement and Editing Interface. In *Proceedings of the 19th annual ACM Symposium on User Interface Software and Technology (UIST)*, Montreux, Switzerland. 23%

Refereed Papers (additional)

1 **Cheng-Kang Ted Chao**, Jason Klein, **Jianchao Tan**, Jose Echevarria, **Yotam Gingold**. 2023. LoCoPalettes: Local Control for Palette-based Image Editing. *Computer Graphics Forum (CGF)* 42(4). Also in *Eurographics Symposium on Rendering (EGSR)*. 29%

2 **Cheng-Kang Ted Chao**, Karan Singh, **Yotam Gingold**. 2021. PosterChild: Blend-Aware Artistic Posterization. *Computer Graphics Forum (CGF)* 40(4). Also in *Eurographics Symposium on Rendering (EGSR)*. 2.4 27%

3 **Josef Graus**, Alec Jacobson, **Yotam Gingold**. 2021. Interacting with Self-Similarity. *Computer-Aided Design (CAD)* 130. 3.7

4 **Songrun Liu**, **Jianchao Tan**, Zhigang Deng, **Yotam Gingold**. 2020. Hyperspectral Inverse Skinning. *Computer Graphics Forum (CGF)* 39(6). Presented at *Eurographics 2021*. 2.1

5 **Jianchao Tan**, Stephen DiVerdi, Jingwan Lu, **Yotam Gingold**. 2019. Pigmento: Pigment-Based Image Analysis and Editing. *IEEE Transactions on Visualization and Computer Graphics (TVCG)* 25(9). Presented at *Expressive 2018*. 4.6

6 Qiuying Xu, **Songrun Liu**, **Yotam Gingold**, Karan Singh. 2016. Using Isophotes and Shadows to Interactively Model Normal and Height Fields. *Computers & Graphics*, 59. 1.2

7 Qiuying Xu, **Yotam Gingold**, Karan Singh. 2015. Inverse Toon Shading: Interactive Normal Field Modeling with Isophotes. In *Proceedings of Sketch-Based Interfaces and Modeling (SBIM)*. **(Best Paper Award)** 51%

8 Jakub Fišer, Michal Lukáč, Ondřej Jamriška, Martin Čadík, **Yotam Gingold**, Paul Asente, Daniel Sýkora. 2014. Synthesis of Hand-colored Animations with Temporal Noise Control. *Computer Graphics Forum* 33(4). Also in *Proceedings of Eurographics Symposium on Rendering (EGSR) 2014*. 1.6 37%

9 Alex Shtof, Alexander Agathos, **Yotam Gingold**, Ariel Shamir, Daniel Cohen-Or. 2013. Geosemantic Snapping for Sketch-Based Modeling. *Computer Graphics Forum* 32(2). Also in *Proceedings of Eurographics 2013*. **(Best Paper Award Nominee)** 1.6 25%

10 Timothy Gerstner, Doug DeCarlo, Marc Alexa, Adam Finkelstein, **Yotam Gingold**, Andrew Nealen. 2013. Pixelated Image Abstraction with Integrated User Constraints. *Computers & Graphics* 37(5). 1.0

11	**Yotam I. Gingold** and Harry Gingold. 2013. Simulation of Perspective by Nonlinear Transformations. *Mathematical Modelling and Analysis* 18(3).	0.5	
12	**Yotam Gingold**, Etienne Vouga, Eitan Grinspun, Haym Hirsch. 2012. Diamonds From the Rough: Improving Drawing, Painting, and Singing via Crowdsourcing. In *Proceedings of the AAAI Workshop on Human Computation (HCOMP)*, Toronto, Canada.		
13	Timothy Gerstner, Doug DeCarlo, Marc Alexa, Adam Finkelstein, **Yotam Gingold**, Andrew Nealen. 2012. Pixelated Image Abstraction. In *Proceedings of the International Symposium on Non-Photorealistic Animation and Rendering (NPAR)*, Annecy, France.		43%
14	Tino Weinkauf, **Yotam Gingold**, Olga Sorkine. 2010. Topology-based Smoothing of 2D Scalar Fields with C1-Continuity. *Computer Graphics Forum* 29(3). Also in *Proceedings of EuroVis 2010*, Bordeaux, France.	1.5	29%
15	Elif Tosun, **Yotam I. Gingold**, Jason Reisman, Denis Zorin. 2007. Shape Optimization Using Reflection Lines. In *Proceedings of the fifth Eurographics Symposium on Geometry Processing (SGP)*, Barcelona, Spain.		28%
16	**Yotam I. Gingold**, Denis Zorin. 2007. Controlled-Topology Filtering. *Computer-Aided Design* 39(8).	1.2	
17	**Yotam I. Gingold**, Harry Gingold. 2007. Geometrical Properties of a Family of Compactifications. *Balkan Journal of Geometry and Its Applications (BJGA)* 12(1).	0.8	
18	Eitan Grinspun, **Yotam Gingold**, Jason Reisman, Denis Zorin. 2006. Computing Discrete Shape Operators on General Meshes. In *Computer Graphics Forum* 25(3). Also in *Proceedings of Eurographics 2006*, Vienna, Austria. **(Best Paper Award, 3rd)**	1.2	17%
19	**Yotam I. Gingold**. 2006. From Rock, Paper, Scissors to Street Fighter II: Proof By Construction. In *Proceedings of the ACM SIGGRAPH Symposium on Videogames (Sandbox)*, Boston, MA. **(Best Paper Award)**		22%
20	**Yotam I. Gingold**, Denis Zorin. 2006. Controlled-Topology Filtering. In *Proceedings of the ACM Symposium on Solid and Physical Modeling (SPM)*, Cardiff, Wales. **(Best Paper Award, 2nd)**		38%

Other Publications

1	**Yong Li**, Shoaib Kamil, Alec Jacobson, **Yotam Gingold**. 2021. I❤️LA: Compilable Markdown for Linear Algebra. *ICLR 2021 Workshop: Rethinking ML Papers* (oral presentation and exhibit).
2	Nanlin Sun, Annette Feng, Ryan Patton, **Yotam Gingold**, Wallace Lages. 2021. Programmable Virtual Reality Environments. Poster presented at the *IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*.

3 Alexander Brodsky, **Yotam Gingold**, Thomas D LaToza, Lap-Fai Yu, Xu Han. 2021. Catalyzing the Agility, Accessibility, and Predictability of the Manufacturing-Entrepreneurship Ecosystem Through Design Environments and Markets for Virtual Things. *Proceedings of the 10th International Conference on Operations Research and Enterprise Systems (ICORES 2021)*.

4 Shay Sheinfeld, **Yotam Gingold**, Ariel Shamir. 2016. Video Summarization Using Crowdsourced Causality Graphs. Poster presented at the *AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, Austin, USA. Paper presented at the *Workshop on Human Computation for Image and Video Analysis (GroupSight @ HCOMP)*, **Best Paper Award**.

5 **Yotam Gingold**. 2016. Review of *A sampler of useful computational tools for applied geometry, computer graphics, and image processing* by Daniel Cohen-Or, Chen Greif, Tao Ju, Niloy J. Mitra, Ariel Shamir, Olga Sorkine-Hornung, Hao (Richard) Zhang, and Gil Hoffer. *American Mathematical Society MathSciNet Mathematical Reviews*. Invited

6 Tim Balint, **Yotam Gingold**, Jan Allbeck. 2014. Agent Script Generation Using Descriptive Text Documents. Poster presented at the *ACM SIGGRAPH Conference on Motion in Games (MIG)*, Los Angeles, USA.

7 **Yotam Gingold**, Adrian Secord, Jefferson Y. Han, Eitan Grinspun, Denis Zorin. 2004. A Discrete Model for Inelastic Deformation of Thin Shells. Poster presented at the *ACM SIGGRAPH/Eurographics Symposium on Computer Animation (SCA)*, Grenoble, France; also an NYU Computer Science Technical Report.

Technology Transfer	**Songrun Liu**, Alec Jacobson, **Yotam Gingold**. 2014. Skinning Cubic Bézier Splines and Catmull-Clark Subdivision Surfaces. *ACM Transactions on Graphics (TOG)* 33(6). Also in *Proceedings of SIGGRAPH Asia 2014*.	Adobe Illustrator's Puppet Warp tool (almost 30 million users)

Grants Awarded		Total Amount	Share	My Share	Date
Total		$867,592	96%	$837,594	
1	**4-VA**, "Collaboration on Virtual Reality Programming Environments". PI: Wallace Santos Lages, co-PI's: **Yotam Gingold**, Ryan Patton.	$34,998	14%	$5,000	2020
2	**National Science Foundation**, "CAREER: Direct Manipulation of Nonlinear Optimization for Structured Geometry Creation". PI: **Yotam Gingold**, co-PI's: none.	$549,373	100%	$549,373	2015–2020
3	**National Science Foundation**, REU supplement for "CAREER: Direct Manipulation of Nonlinear Optimization for Structured Geometry Creation". PI: **Yotam Gingold**, co-PI's: none.	$48,400	100%	$48,400	2015–2020
4	**Adobe**, Unrestricted gifts (8)	$127,500	100%	$127,500	2017–2023
5	**Google Faculty Research Award**, "Diamonds from the Rough: Improving Creative Performance via Aggregation". PI: **Yotam Gingold**, co-PI's: none.	$42,205	100%	$42,205	2014–2015
6	**National Science Foundation**, "EAGER: Improving the Quality and Editability of 2D and 3D Shapes via Crowdsourcing and Self-Crowdsourcing". PI: **Yotam Gingold**, co-PI's: none.	$70,116	100%	$70,116	2014–2016
7	**George Mason University**, "Improving Creative Performance via Crowdsourcing". PI: **Yotam Gingold**, co-PI's: none.	$5,000	100%	$5,000	2013

Awards

George Mason University Teaching Excellence Award	2017
George Mason University Computer Science Department Outstanding Teaching Award	2016
George Mason University Emerging Researcher/Scholar/Creator finalist	2016
George Mason University Emerging Researcher/Scholar/Creator finalist	2015
National Science Foundation Faculty Early Career Award (CAREER)	2015–2020
George Mason University Computer Science Department Outstanding Young Faculty Researcher	2015
Tel-Aviv University Vatat Post-doctoral Research Scholarship	2010–2011
New York University Courant Institute of Mathematical Sciences Janet Fabri Prize for most outstanding dissertation	2009–2010
New York University Dean's Dissertation Fellowship	2008–2009
New York University Harold Grad Memorial Prize for outstanding performance and promise	2007–2008
Highlights of SIGGRAPH, FMX 2016: **Jianchao Tan**, Marek Dvoroznak, Daniel Sykora, **Yotam Gingold**. Recovering Painted Strokes from Time-Lapse Paintings. *SIGGRAPH North America 2015/ACM Transactions on Graphics (TOG)* 34(4).	2016
Best Paper: Shay Sheinfeld, **Yotam Gingold**, Ariel Shamir. 2016. Video Summarization Using Crowdsourced Causality Graphs. *Workshop on Human Computation for Image and Video Analysis (GroupSight @ HCOMP)*	2016
Best Paper: Qiuying Xu, **Yotam Gingold**, Karan Singh. 2015. Inverse Toon Shading: Interactive Normal Field Modeling with Isophotes. In *Proceedings of Sketch-Based Interfaces and Modeling*.	2015
Best Paper: **Yotam I. Gingold**. 2006. From Rock, Paper, Scissors to Street Fighter II: Proof By Construction. In *Proceedings of the 2006 ACM SIGGRAPH Symposium on Videogames (Sandbox)*, Boston, MA.	2006
Best Paper Nominee: Alex Shtof, Alexander Agathos, **Yotam Gingold**, Ariel Shamir, Daniel Cohen-Or. 2013. Geosemantic Snapping for Sketch-Based Modeling. *Computer Graphics Forum*, 32(2). Also in *Proceedings of Eurographics 2013*.	2013
Best Paper, 2nd Place: **Yotam I. Gingold**, Denis Zorin. 2006. Controlled-Topology Filtering. In *Proceedings of the 2006 ACM Symposium on Solid and Physical Modeling (SPM)*, Cardiff, Wales.	2006

	Best Paper, 3rd Place: Eitan Grinspun, **Yotam Gingold**, Jason Reisman, Denis Zorin. 2006. Computing Discrete Shape Operators on General Meshes. In *Proceedings of Eurographics 2006*, Vienna, Austria.	2006

SELECTED TALKS

Stanford "Seminar on People, Computers, and Design", USA "I❤️LA: Compilable Markdown for Linear Algebra"	February 2022
Technion – Israel Institute of Technology, Israel "Hyperspectral Inverse Skinning"	June 2021
Toronto Geometry Colloquium, Canada (virtual) "Color and Geometry"	February 2021
Virginia Tech Industrial Design, USA "Interactive Modeling"	August 2019
New York University, USA "Color, Geometry, and Time-Lapse Painting"	August 2019
University of Toronto, Canada "Color, Geometry, and Time-Lapse Painting"	May 2019
The Fields Institute, Canada "Seam erasure and seam-aware decoupling of shape from mesh resolution"	April 2019
INRIA, France "Simplifying Digital Design"	June 2018
SIGGRAPH Asia Course (refereed) "Sketch-based Modeling"	Dec. 2016
Eurographics Tutorial (refereed) "Sketch-based Modeling"	May 2016
University of Tokyo, Japan "Editable Computer Graphics"	Oct. 2015
Adobe Creative Technology Lab, USA "Editable Computer Graphics"	Aug. 2015
American University, USA "Making and Editing Computer Graphics, with and without a Crowd"	Apr. 2015
University of California, Berkeley, USA "Making and Editing Computer Graphics, with and without a Crowd"	Feb. 2015
SIGGRAPH Asia 2014 Invited Course, China "Skinning: Real-time Shape Deformation"	Dec. 2014
City University of Hong Kong, China "Making and Editing Computer Graphics, with and without a Crowd"	Dec. 2014

Zhejiang University, China — Dec. 2014
"Making and Editing Computer Graphics, with and without a Crowd"

University of Pennsylvania, USA — Nov. 2013
"Rescuing computers from hard problems in graphics"

University of Tokyo, Japan — July 2013
"Rescuing computers from hard problems in graphics"

Inria IMAGINE, France — May 2013
"Rescuing computers from hard problems in graphics"

Virginia Tech, National Capital Region, USA — Nov. 2012
"Geometric Modeling for Humans"

Adobe Creative Technologies Lab, USA — Dec. 2011
"Perceptual Micro Human Computation for Visual Tasks"

Massachusetts Institute of Technology, USA — Nov. 2011
"Perceptual Micro Human Computation for Visual Tasks"

Princeton University, USA — Nov. 2011
"Perceptual Micro Human Computation for Visual Tasks"

Hebrew University of Jerusalem, Israel — Dec. 2010
"2D-Centric Interfaces and Algorithms for 3D Modeling"

University of Toronto, Canada — April 2009
"2D-Centric Interfaces and Algorithms for 3D Modeling"

JST ERATO Design UI Project, Japan — June 2008
"2D-Centric Interfaces and Algorithms for 3D Modeling"

Professional Memberships

ACM

Professional Committees

SIGGRAPH Research Career Development Committee, *Junior Scientist Mentorship* — 2021–present

SIGGRAPH (North America) Technical Papers Award Committee — 2022

Editor, Referee, & Conference Service

ACM SIGGRAPH North America **(2017, 2018, 2021, 2022, 2024 program committee,** 2017 technical briefs and posters program committee, 2022 thesis fast forward**)**

ACM SIGGRAPH Asia **(2015, 2019 program committee,** 2016 technical briefs and posters program committee, 2014 workshops jury**)**

ACM Transactions on Graphics (**2018–2021 associate editor**)

Eurographics (**2015, 2016, 2018, 2019, 2022, 2024 program committee**)

Computer Graphics Forum (**2022–present associate editor**)

Computers & Graphics **(2015–present associate editor)**

Expressive (Sketch-Based Interfaces and Modeling (SBIM); Non-Photorealistic Animation and Rendering (NPAR); Computational Aesthetics (CAe)) **(2017 co-chair, 2016 co-chair, 2011–2019 program committee)**

Capital Graphics **(2018, 2019, 2022, 2023 conference chair)**

CVPR

ACM SIGCHI

ACM UIST

Computer Graphics Forum

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

IEEE Transactions on Visualization and Computer Graphics (TVCG)

IEEE Transactions on Multimedia

Symposium on Geometry Processing (SGP) **(2012–2023 program committee)**

Shape Modeling International (SMI) **(2013–2015, 2017–2023 program committee)**

Pacific Graphics **(2012, 2020 program committee)**

Eurographics Symposium on Rendering (EGSR) **(2022 program committee)**

Geometric & Physical Modeling (GD/SPM) **(2015, 2016 program committee)**

Computer-Aided Design and Computer Graphics (CAD/Graphics) **(2013, 2015 PC)**

AAAI Conference on Human Computation and Crowdsourcing (HCOMP) **(2015 PC)**

3D Vision (3DV) **(2015 area chair)**

Computer-Aided Design (CAD)

Graphical Models

IEEE Computer Graphics and Applications (CG&A)

ACM Sandbox (SIGGRAPH Game Papers) **(2007 program committee)**

Foundations of Digital Games (FDG) **(2015 program committee)**

IEEE Symposium on 3D User Interfaces (3DUI)

Journal of Computational and Applied Mathematics (JCAM)

Journal of Mechanical Engineering Science

Software: Practice and Experience

Grant Referee Service

National Science Foundation (NSF)

Fonds de recherche du Québec

Canada Foundation for Innovation (CFI)

Israel Science Foundation

U.S.-Israel Binational Science Foundation (BSF)

UNIVERSITY SERVICE	CS Tenure-Track Professor Search Committee	AY 2017–18, 2018–19, 2020–21, 2021–22, 2022–23
	University Teaching Excellence Award Committee	AY 2021–22
	School of Computing Stakeholders Committee	AY 2023–24
	CS Research Day Organizing Committee	Fall 2020
	CS Advisory Council	Fall 2018–Spring 2019
	CS Effective Teaching	Fall 2018–Spring 2019
	CS Space	Fall 2018–Spring 2019
	CS Distinguished Lectures Series Committee (co-chair)	Spring 2018–Spring 2019
	CS Undergraduate Studies Committee	Fall 2017–Spring 2018
	CS M.Sc. Admissions Committee	AY 2017–18, 2018–19, 2020–24
	CS PhD Research Symposium Organizing Committee	Spring 2015–Spring 2019
	NSF CAREER mentoring	Spring 2015–Summer 2018
	GAME Research Assistant Professor Search Committee	Spring 2014
	CS Web Committee	Fall 2013–Spring 2019, AY 2022–23
	CS Computing Committee	Fall 2012–Spring 2019

PH.D. ADVISEES	**Jialin Huang**	Fall 2021–present
	Cheng-Kang "Ted" Chao	Fall 2020–present
	Yong Li	Fall 2019–present
	Xue Yu	Fall 2019–present
	Chuan Yan	Fall 2018–present
	Joe Graus, "Interactive Numerical Optimization and Predictive Geometry Registration".	Fall 2016–Fall 2023
	Jianchao Tan, "Image and Video Decomposition and Editing". Research Scientist at Kwai.	Fall 2013–Spring 2019
	Songrun Liu, "Skinning Parametric Curves and Surfaces". Senior Graphics Engineer at Tencent Game AI Center.	Fall 2012–Spring 2018

M.Sc. Theses Advised	**Henro Kriel**, "I❤️IQ: A Shader Graphing Calculator for Signed Distance Functions (SDFs).". Graduated May 2023.	Fall 2022–Spring 2023
	Nusha Mehmanesh, "2D Cartoon Rigs From Uncorresponded Vector Graphics". Graduated May 2019	Spring 2018–Spring 2019
	Anson Rutherford, "Interpolating Pixel Art". Graduated December 2018.	Spring 2018–Fall 2018
	Lisa Huynh, "Bijective Deformations in R^n via Integral Curve Coordinates". Graduated December 2013.	Fall 2012–Fall 2013
	Matthew Sabol, "Improving Sculpting via Crowdsourcing". Graduated May 2014.	Fall 2012–Spring 2014

Undergraduate Mentees	Matthew Yoon, *Brown University*	Summer 2023
	Samantha Tone, *George Mason University*	Summer 2023
	Gabriel Thomsen, *George Mason University*	Spring 2021
	Paul Hughes, *George Mason University*	Summer 2018
	Kyle Falicov, *George Mason University*	Summer 2018
	Benjamin Covington, *George Mason University*	Summer 2018
	Ashley Crouch, *George Mason University*	Summer 2018
	William Kang, *Purdue University*	Summer 2017
	Tristan Schuler, *George Mason University*	Summer 2017
	Zachary Ferguson, *George Mason University*	Fall 2015–Summer 2017
	Guilherme Schaidhauer, *Unisinos*	Summer 2015
	Mingrui Han, *George Mason University*	Summer 2015
	Hussein Zamzani, *George Mason University*	Summer 2015
	William Aulson, *George Mason University*	Summer 2015–Spring 2016
	Jack Casebeer, *George Mason University*	Summer 2015–Summer 2016
	Ananya Dhawan, *George Mason University*	Fall 2014–Spring 2015
	Nick Robinson, *University of Illinois at Urbana-Champaign*	Summer 2014
	Allegra Cohen, *Stanford University*	Summer 2014
	Bradford Webb, *George Mason University*	Fall 2013–Spring 2014
	Eugene Raether, *George Mason University*	Summer 2013–Spring 2014

High School Mentees

Jason Klein, *Thomas Jefferson High School*	Summer and Fall 2021
Joshua Park, *Centreville High School*	Summer 2020
Ruben Ascoli, *Thomas Jefferson High School*	Summer 2017
Ananya Suri, *Thomas Jefferson High School*	Summer 2015
Abhishek Mishra, *Thomas Jefferson High School*	Summer 2014
William Xu, *Thomas Jefferson High School*	Summer 2013
Chris Kim, *Thomas Jefferson High School*	Summer 2013
Jae Yun, *Thomas Jefferson High School*	Summer 2013

Ph.D. Committee Membership

Student	Advisor	Department	Graduation
Chenxi Liu	Alla Sheffer	University of British Columbia	Jun. 2023
Changyang Li	Lap-Fai (Craig) Yu	GMU Computer Science	
Rawan Alghofaili	Lap-Fai (Craig) Yu	GMU Computer Science	Jul. 2022
Wanchao Su	Rynson Lau	City Univ. of Hong Kong	Jul. 2021
Yue Hao	Jyh-Ming Lien	GMU Computer Science	Jun. 2021
Wenyan Bi	Bei Xiao	American University	Oct. 2019
Changjian Li	Wenping Wang	University of Hong Kong	Aug. 2019
Qi Xing	Qi Wei	GMU Bioengineering	Apr. 2019
Even Entem	Marie-Paul Cani	Université Grenoble Alpes	Oct. 2018
Jean-Dominique Favreau	Adrien Bousseau	University Côte d'Azur	Mar. 2018
J. Timothy Balint	Jan Allbeck	GMU Computer Science	Jul. 2017
George Whelan	Neil Epstein	GMU Mathematics	Apr. 2017
Guilin Liu	Jyh-Ming Lien	GMU Computer Science	Jul. 2017
Zhonghua Xi	Jyh-Ming Lien	GMU Computer Science	May 2017
Hao Sun	Jim X. Chen	GMU Computer Science	Nov. 2014
Ian Spiro	Christoph Bregler	NYU Computer Science	Sep. 2013

Courses Taught and Developed at GMU

CS 325 Introduction to Game Design (undergraduate)

Description: Game design, in various electronic entertainment technologies, involves a diverse set of skills and backgrounds from narrative and art to computer programming. This course surveys the technical aspects of the field, with an emphasis on programming innovative game design.

Development: I revamped this course to heavily emphasize prototyping. The workload increased from 1 prototype to biweekly or weekly prototypes. I introduced a new textbook, peer learning, flipped classroom discussions, a discussion of diversity or representation in games, and modern programming tools.

CS 662 Computer Graphics and Game Technologies (graduate)

Description: This course provides an introduction to technologies and techniques used in modern computer graphics, games, and animations. The homework consists of several complex and mathematics-heavy programming assignments.

Development: I transitioned to a flipped classroom and introduced reciprocal learning. I revamped the homework assignments and emphasize technological flexibility by using new and wildly different technology platforms for each.

CS 451 & 551 Computer Graphics (undergraduate and graduate)

Description: This course provides an introduction to computer graphics principles and practice. The homework consists of six intensive programming assignments.

Development: I revamped the homework assignments, broadening their scope and modernizing them to ensure students are fluent in 2D and 3D computer graphics, including image processing, geometry processing, and rendering. I also introduced peer learning for in-class quizzes.

CS 425 Game Programming I (undergraduate)

Description: This course provides an overview of technical topics in game programming. For the first half of the course, students create a C++ game engine from scratch (graphics, sounds, input handling, entity-component-system, and scripting). In the second half of the course, students build on each others' engines to make a game that showcases additional game engine technology.

Development: I completely revamped the homework projects. Unlike most computer science courses, students are given no skeleton code or project to work from. Students are taught up-to-date C++ best practices, build systems, and GPU programming.

CS 426 Game Programming II (undergraduate)

DESCRIPTION: This is a capstone class for computer science students in the Computer Game Design concentration. During the course, students make a functioning and complete game. Students gain experience planning, executing, and presenting the development of a substantial game from start to finish.

DEVELOPMENT: I introduced flipped classroom discussions based on a documentary series that parallels students' own progress in the class.

CS 112 Introduction to Computer Programming (undergraduate)

DESCRIPTION: This course introduces students to problem solving through the development of computer programs. The course teaches algorithmic patterns, describing problem solutions in high-level *pseudo code*, and implementing the solutions in a programming language.

DEVELOPMENT: I introduced performance-based learning by choreographing students to physically act out computer processes and interpretation of simple programs. I also adapted an exercise from improvisational theater, word-at-a-time storytelling, to have the class perform key-at-a-time programming.

SEMINARS CREATED AT GMU

CS 795 Interactive Computer Graphics and Creativity Support
I introduced this special topics course to cover research on interactive computer graphics tools for digital painting, sculpting, interior designing, video editing, architecture, etc., intended for non-experts as well as experts. Class is discussion and project-based.

SIGGRAPH Reading Group
I created this ongoing weekly seminar (2014–present) to discuss papers from SIGGRAPH and Transactions on Graphics, the premiere venue for computer graphics research. Every week a student guides attendees through a paper. I act as a naive questioner and deliver mini-tutorials on background material as needed and for context.

EVALUATIONS OF COURSES TAUGHT AT GEORGE MASON UNIVERSITY

				Instructor Rating (average)				Course Rating (average)			
Term	**Course**		**Enrol.**	**me**	**dept**	**VSE**	**GMU**	**me**	**dept**	**VSE**	**GMU**
Fall 2023	CS 325	Introduction to Game Design	35								
Fall 2023	CS 425	Game Programming I	28								

Term	Course		Enrol.	Instructor Rating (average)				Course Rating (average)			
				me	dept	VSE	GMU	me	dept	VSE	GMU
Spring 2023	CS 426	Game Programming II	15	University no longer provides overall "instructor" and "course" metrics							
Fall 2022	CS 451	Computer Graphics	48								
Fall 2022	CS 425	Game Programming I	23								
Spring 2022	CS 325	Introduction to Game Design	42								
Spring 2022	CS 426	Game Programming II	11								
Fall 2021	CS 551	Computer Graphics	32	4.87	4.06	4.13		4.93	3.94	4.00	
Spring 2021	CS 451	Computer Graphics	50*	5.00	4.03	4.16	4.35	5.00	3.91	4.02	4.23
Spring 2021	CS 325	Introduction to Game Design	45*	3.50	4.03	4.16	4.35	3.75	3.91	4.02	4.23
Fall 2020	CS 551	Computer Graphics	26	4.50	4.10	4.15	4.29	4.50	3.96	4.02	4.16
Spring 2018	CS 662	Computer Graphics and Game Technologies	16	4.82	4.32	4.34	4.47	4.67	4.12	4.09	4.28
Spring 2018	CS 325	Introduction to Game Design	48	4.60	4.32	4.34	4.47	4.37	4.12	4.09	4.28
Fall 2017	CS 451	Computer Graphics	37	4.83	4.26	4.27	4.43	4.55	4.07	4.01	4.23
Spring 2017	CS 325	Introduction to Game Design	43	4.32	4.21	4.26	4.45	4.04	4.05	4.00	4.26
Spring 2016	CS 426	Game Programming II	7	4.86	4.11	4.25	4.44	4.86	3.97	4.00	4.24
Spring 2015	CS 325	Introduction to Game Design	44	4.74	4.14	4.23	4.42	4.47	3.96	3.98	4.21
Fall 2014	CS 662	Computer Graphics and Game Technologies	15	4.79	4.17	4.24	4.39	4.50	3.91	3.97	4.18
Spring 2014	CS 325	Introduction to Game Design	42	4.97	4.18	4.25	4.41	4.82	3.97	3.99	4.21

EVALUATIONS OF COURSES TAUGHT AT GEORGE MASON UNIVERSITY

Term	Course		Enrol.	Instructor Rating (average)				Course Rating (average)			
				me	dept	VSE	GMU	me	dept	VSE	GMU
Spring 2014	CS 795	Interactive Graphics and Creativity Support	4	4.75	4.18	4.25	4.41	4.75	3.97	3.99	4.21
Fall 2013	CS 112	Introduction to Computer Programming	43	4.50	4.30	4.25	4.38	4.17	4.12	4.01	4.18
Spring 2013	CS 325	Introduction to Game Design	38	4.73	4.29	4.26	4.41	4.48	4.13	4.03	4.22
Fall 2012	CS 662	Computer Graphics and Game Technologies	6	5.00	4.27	4.19	4.37	4.80	4.08	3.94	4.17

* Online course with ≤ 6 responses