Rahul Arora

CONTACT INFORMATION

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RESEARCH INTERESTS

Interactive Computer Graphics
Human-Computer Interaction
Virtual and Augmented Realities

EDUCATION

PhD, **University of Toronto** 2015-Present
Major: Computer Science
CGPA: 4.0/4.0

MTech, **Indian Institute of Technology, Kanpur** 2014-2015
Major: Computer Science and Engineering
CGPA: 9.6/10.0

BTech, **Indian Institute of Technology, Kanpur** 2010-2015
Major: Computer Science and Engineering
CGPA: 8.5/10.0

PEER-REVIEWED PUBLICATIONS

MagicalHands: Mid-Air Hand Gestures for Animating in VR
Rahul Arora, Rubaiat Habib Kazi, Danny Kaufman, Wilmot Li, and Karan Singh
ACM Symposium on User Interface Software and Technology 2019 (UIST '19)
`https://www.dgp.toronto.edu/projects/magical-hands/`

Volumetric Michell Trusses for Parametric Design & Fabrication
Rahul Arora, Alec Jacobson, Timothy R. Langlois, Yijiang Huang, Caitlin Mueller, Wojciech Matusik, Ariel Shamir, Karan Singh, and David I.W. Levin
ACM Symposium on Computational Fabrication 2019 (SCF '19)
`https://www.dgp.toronto.edu/projects/michell/`

SymbiosisSketch: Combining 2D and 3D Sketching for Designing Detailed 3D Objects in Situ
Rahul Arora, Rubaiat Habib Kazi, Tovi Grossman, George Fitzmaurice, and Karan Singh
ACM SIGCHI Conference on Human Factors in Computing Systems 2018 (CHI '18)
`https://doi.org/10.1145/3328939.3328999`

Experimental Evaluation of Sketching on Surfaces in VR
Rahul Arora, Rubaiat Habib Kazi, Fraser Anderson, Tovi Grossman, Karan Singh, and George Fitzmaurice
ACM SIGCHI Conference on Human Factors in Computing Systems 2017 (CHI '17)
`http://dx.doi.org/10.1145/3025453.3025474`

SketchSoup: Exploratory Ideation using Design Sketching
Rahul Arora, Ishan Darolia, Vinay P. Namboodiri, Karan Singh, and Adrien Bousseau
Computer Graphics Forum (CGF) 2017, presented at Eurographics 2017
`http://dx.doi.org/10.1111/cgf.13081`

Derandomizing Isolation Lemma for $K_{3,3}$-free and K_5-free Bipartite Graphs
Rahul Arora, Ashu Gupta, Rohit Gurjar, and Raghunath Tewari
Symposium on Theoretical Aspects of Computer Science (STACS) 2016
http://dx.doi.org/10.4230/LIPIcs.STACS.2016.10

OTHER PUBLICATIONS

Mid-Air Drawing of Curves on 3D Surfaces in AR/VR (Preprint)
Rahul Arora, Karan Singh
arXiv preprint
https://arxiv.org/abs/2009.09029

Creative Expression with Immersive 3D Interactions (Juried)
Rahul Arora
Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20 Doctoral Consortium)
https://dl.acm.org/doi/10.1145/3334480.3375028

Designing Volumetric Truss Structures for Computational Fabrication (Juried)
Rahul Arora, Alec Jacobson, Timothy R. Langlois, Karan Singh, and David I.W. Levin
Graphics Interface 2018 Posters (GI '18)
https://bit.ly/31CTjtw

AWARDS AND RECOGNITION

Wolfond Scholarship in Wireless Information Technology: CA $10,000	2019
UofT Libraries Grad Exhibit Competition (3 winners): CA $1,000	2019
Adobe Research Fellowship 2019 (11 fellows): US $10,000	2018
Adobe Research Fellowship 2018 Finalist	2017
Mitacs Accelerate Award for industrial partnership: CA $15,000	2016
Merit-cum-Means Scholarship, IIT Kanpur: Full tuition amount	2010–2014
Academic Excellence Award, IIT Kanpur (top 5% students)	2013

INTERNSHIPS

Adobe Research, Seattle, USA Summer 2019
with Timothy Langlois, Danny Kaufman, and Rubaiat Habib
Worked on techniques for creating stylized animations of 2D fluids.

Adobe Research, Seattle, USA Summer 2018
with Rubaiat Habib, Danny Kaufman, and Wil Li
Studied gestural methods for authoring animations in VR.

Autodesk Research, Toronto, Canada Winter 2017
with Tovi Grossman and Rubaiat Habib
Developed an augmented reality tool for 3D concept sketching.

Autodesk Research, Toronto, Canada Summer 2016
with Tovi Grossman and Rubaiat Habib
Conducted lab experiments to understand 3D sketching ability.

Inria, Sophia-Antipolis, France Summer 2014
with Adrien Bousseau
Developed a user-guided method for ideation sketch interpolation.

Adobe Research, Bangalore, India Summer 2013
with Ramesh Srinivasaraghavan
Built a gamified crowdsourcing platform for object recognition tasks.

TEACHING EXPERIENCE

Computer Graphics, University of Toronto Fall 2019
Teaching Assistant for Prof. Alec Jacobson

Computer Graphics, University of Toronto Winter 2019
Teaching Assistant for Prof. David Levin

Computer Graphics, University of Toronto Winter 2018
Teaching Assistant for Prof. Karan Singh and Prof. David Levin

Computer Graphics, University of Toronto Fall 2017
Teaching Assistant for Prof. Karan Singh and Prof. Alec Jacobson

Intro to Theory of Computation, University of Toronto Fall 2015
Teaching Assistant for Prof. Azadeh Farzan

Introduction to Computer Graphics, IIT Kanpur Fall 2014
Teaching Assistant for Prof. Vinay P. Namboodiri

ACTIVITIES

Committee Member for SIGGRAPH Asia 2021 XR Program.

Area Chair for Graphics Interface (GI) 2020.

Student Volunteer at User Interface Software and Technology (UIST) 2019.

Reviewer for computer graphics conferences: SIGGRAPH, SIGGRAPH Asia, and Graphics Interface (GI).

Reviewer for computer graphics journals: Computer Graphics Forum (CGF), Transactions on Visualization and Computer Graphics (TVCG), Computer-Aided Design (CAD), and Computer Graphics & Applications (CG&A).

Reviewer for HCI conferences: User Interfaces Software and Technology (UIST), Conference on Human Factors in Computing Systems (CHI), Designing Interactive Systems (DIS), and Graphics Interface (GI).

Reviewer for specialized VR/AR conferences: Virtual Reality (IEEE VR), Virtual Reality Software and Technology (VRST), International Symposium on Mixed and Augmented Reality (ISMAR), Spatial User Interaction (SUI).

Reviewer for other venues: Springer Nature Applied Sciences (SNAS).