Tomer Weiss

Assistant Professor

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I. Education

2013–2018 **Ph.D., Computer Science**, *University of California, Los Angeles*.

2013–2015 **M.S., Computer Science**, *University of California, Los Angeles*.

2009–2012 **B.S., Computer Science**, *Tel Aviv University*, Tel Aviv, Israel.

II. Research Interests

Machine Learning statistical and crowd sourced learning, deep reinforcement learning, real-time optimization

Graphics and Vision physics-based simulation and modeling, multi-agent dynamics, scene synthesis, gpu algorithms, virtual/mixed reality

III. Experience

A. Academic Appointments

2020-Present **Assistant Professor**,
Department of Informatics, Ying Wu College of Computing,
New Jersey Institute of Technology.
Newark, NJ

2019 **Researcher in Residence**,
Institute for Computational and Experimental Research in Mathematics, (ICERM),
Spring Semester Program on Computer Vision,
Brown University.
Providence, RI

B. Non-Academic Employment

2018-2019 **Computer Vision Researcher**, *Wayfair*, Boston.

Sum. 2017 **Researcher**, *Autodesk Research*, San Fransisco.

Sum. 2016 **Machine Learning Researcher**, *A9.com (Amazon Search)*, Palo Alto.

Sum. 2015 **Software Engineer**, *Bloomberg LP*, New York.

2012-2013 **Software Engineer**, *Parametric Technology Corp*.

2011-2012 **Software Engineer**, *Datonics LLP*.

IV. Awards and Honors

2025 Best Student Paper Award, ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games, Jersey City, NJ

2018 Internationally Selected Invitee, ACM SIGGRAPH ASIA Doctoral Consortium, Tokyo, Japan

2018 Finalist, ACM SIGGRAPH Thesis Fast Forward, Vancouver, Canada

2017 Best Paper Award, 10th International ACM SIGGRAPH Conference on Motion in Games, Barcelona, Spain

2016-2017 Graduate Division Fellowship, UCLA

2016-2017 Honorarium Award for Service, Computer Science Department, UCLA

2013-2014 Doctoral Student Fellowship, Computer Science Department, UCLA

V. Publications

Dashed underlines: students who were/are my advisees

A. Dissertations

2018 **A Constraint-Based Approach to Crowd Simulation and Layout Design**
T.Weiss
Doctoral Thesis, UCLA

2016 **Make it Float: Optimizing Design of Physical Objects for Fabrication**
T.Weiss
Master's Thesis, UCLA

C. Book Chapters

2024 **Real-Time Simulation of Massive Crowds**
T.Weiss
GPU Zen 3, Black Cat Publishing, Encinitas, CA.
ISBN: 979-8344236797

2020 **Style Similarity as Feedback for Product Design**
M.Schwartz, T.Weiss, E.Ataer-Cansizoglu, and J.Choi,
Morphological Analysis of Cultural DNA, Springer, New York.
Published: September 24, 2020, pp 27—42, ISBN: 978-981-15-7707-9

D. Refereed Journal Articles

Accepted

2025 **Foveated Animations for Efficient Crowd Simulation**
Florin-Vladimir Stancu, T.Weiss, and Rafael Kuffner dos Anjos
ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D), Jersey City, NJ, May 7-9
Best Student Paper Award

2025 **Generalized, Dynamic Multi-agent Torso Crowds**
B.Talkudar and T.Weiss
ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D), Jersey City, NJ, May 7-9

Published

2024 **Learning Crowd Motion Dynamics with Crowds**
B.Talukdar, Y.Zhang, T.Weiss
Proceedings of the ACM on Computer Graphics and Interactive Techniques[1]
Vol. 7, Issue 1, pp 1–17. Published: May 13, 2024

2023 **Formation-Aware Planning and Navigation with Corridor Shortest Path Maps**
R.Sharma, T.Weiss, and M.Kallmann
Computer Graphics Forum, Vol. 43, Issue 1, February 2024. Published: December 4, 2023

2023 **Fast Position-based Multi-Agent Group Dynamics**
T.Weiss
Proceedings of the ACM on Computer Graphics and Interactive Techniques[1]
Vol. 6, Issue 1, pp 1–15. Published: May 16, 2023

2022 **Reconstructing room scales with a single sound for augmented reality displays**
B.Liang, A.Liang, I.Roman, T.Weiss, B.Duinkharjav, J.Bello, Q.Sun
Journal of Information Display, 24(1), 1–12. Published: Nov. 15, 2022

2020 **Image-Driven Furniture Style for Interactive 3D Scene Modeling**
T.Weiss, I.Yildiz, N.Agarwal, E.Cansizoglu, J.Choi
Computer Graphics Forum (Proc. of Pacific Graphics), Vol. 39, Issue 7, pp. 57–68. Published: Nov. 24, 2020

2019 **Fast and Scalable Position-Based Layout Synthesis**
T.Weiss, A.Litteneker, N.Duncan, M.Nakada, C.Jiang, L.Yu, D.Terzopoulos
Short version in IEEE Conference on Computer Vision and Pattern Recognition (CVPR) workshop on Vision Meets Cognition, June 18-22 2018
IEEE Transactions on Visualization and Computer Graphics (TVCG), Vol. 25, Issue 12, pp. 3231-3243. Published: Dec. 1, 2019

2018 **Deep Learning of Biomimetic Sensorimotor Control for Biomechanical Human Animation**
M.Nakada, T.Zhao, H.Chen, T.Weiss, D.Terzopoulos
ACM Transactions on Graphics (SIGGRAPH), Vol. 36, Issue 4, Article 56, pp 1—15, Published: Jul. 30, 2018

2018 **Position-Based Real-Time Crowd Simulation of Large Crowds**
T.Weiss, A.Litteneker, C.Jiang, D.Terzopoulos
Computers & Graphics, Vol. 78, pp.12–22. Special Section on *Motion in Games 2017*, Published: Oct. 31, 2018

E. Peer Reviewed Conference Publications

Under Review

2025 **Insect Simulation TBD**
M.Loges and T.Weiss
Conditionally accepted, ACM SIGGRAPH Symposium of Computer Animation, Vancouver, Canada, August 8–10

Accepted

2025 **How to Break Crowd Simulation Algorithms**
A.Chen and T.Weiss
To appear in ACM SIGGRAPH 2025 Talks, Vancouver, BC, Canada, August 10–14

Published

2024 **Crowd-sourced Evaluation of Combat Animations**
Y.Zhang and T.Weiss
IEEE International Conference on Artificial Intelligence and eXtended and Virtual Reality (AIxVR), pp. 60–65, Los Angeles, CA, Jan. 17-19

2022 **LayoutEnhancer: Generating Good Indoor Layouts from Imperfect Data**
K.Leimer, P.Guerrero, T.Weiss and P.Musialski
ACM SIGGRAPH Asia Conference Papers, 27:1–8, Daegu, South Korea, Dec. 6-9

2020 **Plane-Based Local Behaviors for Multi-Agent 3D Simulations with Position-Based Dynamics**
R.Sharma, T.Weiss, and M.Kallmann
IEEE AIVR 2020, MARCH Workshop: Modeling and Animating Realistic Crowds and Humans, pp. 214–217, Virtual, Dec. 14-18

[1]Special issue published as a journal paper of Interactive 3D Graphics and Games (I3D)

2020 **Interactive and Scalable Layout Synthesis with Design Templates**
H.Farooki, E.Ataer-Cansizoglu, J.Choi, T.Weiss
IEEE AIVR 2020, Industy-track paper, pp. 235–238, Virtual, Dec. 14-18

2020 **Interactive Design of Gallery Walls via Mixed Reality**
H.Huang, Y.Zhang, T.Weiss, R.Perry, L.Yu
IEEE AIVR 2020, Session on AI for new interaction, experiences, and applications in VR and AR, pp. 17–26, Virtual, Dec. 14-18

2019 **Room Style Estimation for Style-Aware Recommendation**
E.Cansizoglu, H.Liu, T.Weiss, A.Mitra, D.Dholakia, J.Choi, D.Wulin
IEEE International Conference on Artificial Intelligence & Virtual Reality (AIVR), pp. 267–2673, San Diego, CA, Dec. 9-11

2017 **Position-Based Multi-Agent Dynamics for Real-Time Crowd Simulation**
T.Weiss, A.Litteneker, C.Jiang, D.Terzopoulos
Proc. of the Tenth International ACM SIGGRAPH Conference on Motion in Games, 10:1–8, Barcelona, Spain, Nov 8-10
(Media: Gamasutra) Invited to contribute an extended blog version
Best Paper Award

2017 **Automated Layout Synthesis and Visualization From Images of Interior or Exterior Spaces**
T.Weiss, M.Nakada, D.Terzopoulos
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) workshop on Vision Meets Cognition, pp. 41-47, Honolulu, Hawaii, July 21-26

F. Peer Reviewed Abstracts and Posters

2023 **Position-based Torso Crowds**
B. Talukdar, Y.Zhang, T.Weiss
ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D) Posters, Philadelphia, PA, May 8-10

2023 **Learning to Simulate Crowds with Crowds**
B. Talukdar, Y.Zhang, T.Weiss
ACM SIGGRAPH Posters, 6:1–2, Los Angeles, CA, Aug. 6-10

2022 **Visual clutter: The role of background texture, set size, and item organization**
Y. Semizer, T.Weiss
Journal of Vision, Issue 23, Vol. 9 (2023): pp. 4940, Vision Sciences Society Annual Meeting Abstract, St. Petersburg, FL, May 19-24, 2023

2022 **Learning Anticipatory Multi-Agent Navigation with Position-Based Deep Reinforcement Learning**
B. Talukdar, T.Weiss
Society for Industrial and Applied Mathematics (SIAM) Conference on Mathematics of Data Science, abstract, San Diego, CA, Sep. 26-30

2022 **Comparing Visual Clutter Metrics: What Feature is Important?**
Y.Semizer, T.Weiss
American Psychological Association, Poster, Aug. 4-6

2022 **Image-Driven 3D Object Style Estimation**
T.Weiss, I.Yildiz, N.Agarwal, and E.Ataer-Cansizoglu
Society for Industrial and Applied Mathematics (SIAM) Conference on Imaging Science, abstract, Virtual, Mar. 21-25

2020 **3D Behaviors for Multi-Agent Simulations with Position-Based Dynamics**
R.Sharma, T.Weiss, M.Kallmann
Short version in ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games, Virtual, Sep. 15-17

2019 **Implementing Position-Based Real-Time Simulation of Large Crowds**
T.Weiss
MARCH Workshop on Modeling and Animating Realistic Crowds and Humans,
IEEE International Conference on Artificial Intelligence & Virtual Reality (AIVR), pp. 306–3061, San Diego, CA, Dec. 9-11

2017 **Position-Based Multi-Agent Dynamics for Real-Time Crowd Simulation**
T.Weiss, A.Litteneker, C.Jiang, D.Terzopoulos
Short version in Proc. of the ACM SIGGRAPH/Eurographics Symposium on Computer Animation, Los Angeles, CA, July 28-30, 27:1–2

G. Published Software

Crowd Simulation Method, Open Source, https://github.com/tomerwei/pbd-crowd-sim

H. Unrefereed Publications

2022 **ATEK: Augmenting Transformers with Expert Knowledge for Indoor Layout Synthesis**
K.Leimer, P.Guerrero, T.Weiss and P.Musialski
ArXiv

VI. Professional Presentations

Invited Talks

Feb. 2025 Learning to Simulate Virtual AI Agents at Scale
Invited Speaker, Games Division, University of Utah, Salt Lake City, UT

Nov. 2024 Learning to Simulate AI Agent Dynamics at Scale
Invited Speaker, Computer Science Department, University of Texas San Antonio, TX

Dec. 2023 Next-Generation Learning for 3D Scene Synthesis at Scale
Invited Speaker, Computer Science Department, Stevens Institute of Technology, NJ

Apr. 2023 Learning Deep Representations for Collective Behaviors
Invited Speaker, Institute for Future Technologies, New Jersey Institute of Technology, NJ

Oct. 2022 Interactive Multi-Agent Dynamics Simulation for Physical and Virtual Worlds
Invited Speaker, Computer Science and Engineering colloquium, University of Connecticut, Storrs, CT

Sep. 2022 Interactive Multi-Agent Dynamics Simulation for Physical and Virtual Worlds
Invited Speaker, Department of Electrical and Computer Engineering, Stevens Institute of Technology, NJ

May 2022 Virtual Content Synthesis: From Spaces to Multi-Agent Dynamics
Invited Speaker, Toyota Technological Institute, Chicago

May 2022 Creating virtual spaces with computational interior design and deep learning
Invited Speaker, Computer Graphics Seminar in the Courant Institute of Mathematical Sciences, New York University, New York

Jan. 2022 Fast Virtual Content Synthesis: From Spaces to Pedestrian Motion Dynamics
Invited Speaker, Cambridge Mobile Telematics, Boston

Nov. 2021 Real-Time Virtual Content: From Spaces to Crowd Dynamics
Presentation, MARCH Workshop on Modeling and Animating Realistic Crowds and Humans, IEEE International Conference on Artificial Intelligence & Virtual Reality (AIVR)

Sep. 2021 Fast Virtual Content Synthesis: From Spaces to Crowds
Invited Speaker, Computer Science and Engineering
UC Riverside

Jul. 2021 Creating virtual spaces with computational interior design and deep learning
Invited Speaker, Artificial Intelligence Division
USC Information Sciences Institute

Feb. 2021 Bridging the Gap between Physical and Virtual Reality
Invited Speaker, Computer Science Department
UC Davis

Oct. 2020 Bridging the Gap between Physical and Virtual Reality
Invited Lecture, SIG Research Center for Computer Graphics
University of Pennsylvania

Apr. 2020 Bridging the Gap between Physical and Virtual Reality
PIXL seminar talk, Computer Science Department
Princeton University

Nov. 2019 Bridging the Gap between Physical and Virtual Reality
School of Computer Science Weekly Seminar
Interdisciplinary Center Herzliya (IDC)

Nov. 2019 Bridging the Gap between Physical and Virtual Reality
Faculty of Engineering Seminar
Bar Ilan University

Nov. 2019 Wayfair: Finding your perfect home with data and computational interior design
Data Science Initiative
Harvard University

Oct. 2019 Bridging the Gap between Physical and Virtual Reality
Computer Graphics Group Seminar
UMass Amherst

May 2019 Bridging the Gap between Physical and Virtual Reality
Computer Graphics Group Seminar
CSAIL, MIT

Apr. 2019 Bridging the Gap between Physical and Virtual Reality
Guest Lecture
Dept. of Computer and Information Science, Fordham University

Mar. 2019 Bridging the Gap between Physical and Virtual Reality
Colloquia
Dept. of Computer Science, University of Massachusetts Boston

Mar. 2019 Bridging the Gap between Physical and Virtual Reality
CS Seminar
Dept. of Computer Science, Illinois Institute of Technology

Mar. 2019 Bridging the Gap between Physical and Virtual Reality
Research Seminar
Dept. of Computer Science, University of North Carolina at Charlotte

Mar. 2019 Bridging the Gap between Virtual and Physical Worlds
Research Seminar
Digital Worlds Institute, University of Florida

Mar. 2019 Position-Based Multi-Agent Dynamics for Real-Time Crowd Simulation
Guest Lecture
Digital Worlds Institute, University of Florida

Mar. 2019 Powering the Next Generation of Human Learning with Immersive Virtual Environments
Research Seminar
Learning Sciences Cluster, University of Central Florida

Mar. 2019 Bridging the Gap between Physical and Virtual Reality
Research Seminar
Dept. of Computer Science, University of Central Florida

Feb. 2019 Bridging the Gap between Physical and Virtual Reality
Colloquium
Dept. of Computer Science, Old Dominion University

Feb. 2019 Bridging the Gap between Physical and Virtual Reality
Research Presentation
Dept. of Informatics, New Jersey Institute of Technology

Jan. 2019 Introduction to Functional Programming
Guest Lecture
Dept. of Computer Science, Loyola Marymount University

Nov. 2018 A fast and scalable approach for simulating multi-agent crowds and for creating virtual layouts
Computer Science Colloquium
Dept. of Computer Science, Dartmouth College

Oct. 2018 A fast and scalable approach for simulating multi-agent crowds and for creating virtual layouts
Computer Science Colloquium
Dept. of Computer Science, University of Massachusetts Lowell

Oct. 2018 A fast and scalable approach for simulating multi-agent crowds and for creating virtual layouts
Computer Graphics Colloquium
Dept. of Computer Science, University of Pennsylvania

Jun. 2018 Simulating virtual crowds with 100,000 agents in real-time on your laptop
Boston Computational Creativity Interest Group
Boston, MA

Mar. 2018 Simulating virtual crowds with 100,000 agents in real-time on your laptop
Visual Computing and Interaction Seminar
Computer Science, Electrical Engineering, Media Arts and Technology (Jointly)
University of California Santa Barbara

Mar. 2018 Simulating virtual crowds with 100,000 agents in real-time
Dept. Seminar Series
Dept. of Computer Science, University of Massachusetts Boston

Mar. 2018 Simulating virtual crowds with 100,000 agents in real-time on your laptop
EECS Technical Seminar Series
Electrical Engineering and Computer Science, University of California Merced

Feb. 2018 Position-based methods for real-time crowd simulation and modeling applications
Computer Graphics and Visualization group
School of Information and Computer Sciences, University of California Irvine

Feb. 2018 Position-based multi-agent dynamics for real-time crowd simulation and modeling applications
Center for Visual Computing
Dept. of Computer Science and Engineering, University of California San Diego

Dec. 2017 Position-based multi-agent dynamics for real-time crowd simulation
Graphics and Vision Seminar, hosted by Prof. Daniel Cohen-Or
School of Computer Science, Tel Aviv University

Contributed Conference Presentations

May 2023 Fast Position-based Multi-Agent Group Dynamics
ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games, WA, USA, May 3-5.

Feb. 2022 Computer Graphics & Vision at the New Jersey Institute of Technology (Link)
Workshop on Sustainable Research Pathways for High-Performance Computing, Sustainable Horizons Institute, Rancho Mirage, CA

Dec. 2020 Position-Based Real-Time Simulation of Large Crowds (Media)
Workshop on Social Dynamics beyond Vehicle Autonomy, Institute for Pure & Applied Mathematics, UCLA

Sep. 2020 Fast and Scalable Position-Based Layout Synthesis
ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games, Virtual, Sep. 14-18

Dec. 2019 Implementing Position-Based Real-Time Simulation of Large Crowds
MARCH Workshop on Modeling and Animating Realistic Crowds and Humans,
IEEE International Conference on Artificial Intelligence & Virtual Reality (AIVR), Dec. 9-11

Dec. 2018 A Constraint-Based Approach to Crowd Simulation and Layout Design
ACM SIGGRAPH Asia Doctoral Consortium
Tokyo, Japan, Dec 4

Oct. 2018 Gallery Wall Synthesis and Visualization
International Conference on Predictive Applications and APIs, Boston, MA, Oct. 17

Aug. 2018 A Constraint-Based Approach to Crowd Simulation and Layout Design
ACM SIGGRAPH Thesis Fast Forward, Vancouver, BC, Canada, Aug 14

Nov. 2017 Position-Based Multi-Agent Dynamics for Real-Time Crowd Simulation
Proc. of the Tenth International ACM SIGGRAPH Conference on Motion in Games, Nov 8-10

Jul. 2017 Position-Based Multi-Agent Dynamics for Real-Time Crowd Simulation
Proc. of the ACM SIGGRAPH/Eurographics Symposium on Computer Animation, July 28-30

Other Presentations

Mar. 2019 Computing Community Consortium (CCC)
Content Generation for Workforce Training workshop, March 14-15

VII. Teaching Experience

A. Classes Taught

Fall, Spr. 2020-24 **Computer Graphics for Visual Effects**, Informatics, NJIT.
Covers current techniques and foundational algorithms in graphics, including: 2D/3D graphics, color, images and image processing, rendering technologies, ray tracing, physics-based simulation, animation, and artificial intelligence methods for virtual worlds. Class includes several assignments and a final project.

Spr. 2022 **AI for Artificial Worlds**, Informatics, NJIT.
Artificial worlds enables creators such as artists, programmers and scientists to realize their creative visions. This class is a seminar-oriented research course covering topics at the intersection of graphics, animation, and AI. This course will explore the recent research in AI, multi-agent simulation, artificial physics, content creation, including data-driven and deep learning methods.

Spr. 2022 **Information Design Techniques**, Informatics, NJIT.
Introduction to interactive programming and design of graphics applications. Includes: user experience diagramming, feature-centered design, event-driven programming, user interfaces, graphics, animations, and interface integration. Projects focus on cross-platform delivery of web applications using WebGL.

Fall, Spr., Win. 2014-18 **Programming Languages**, CS, UCLA.
Basic concepts in design and use of programming languages, including abstraction, modularity, control mechanisms, types, declarations, syntax, and semantics. Study of several different language paradigms: OCaml, Python, Java, Scheme and Prolog.

Spr. 2017 **Software Engineering**, CS, UCLA.
Structured programming, program specification, program proving, modularity, abstract data types, composite design, software tools, software control systems, program testing, team programming.

Win. 2016 **Software Construction Lab**, CS, UCLA.
Fundamentals of open-source and other software tools and environments, used in upper-division computer science courses and in the software industry.

Fall 2015 **Computer Science Freshman Seminar**, CS, UCLA.
Introduction to principal topics and key ideas in computer science and engineering. Seminar includes assignments, independent study, and writing reports.

B. Curriculum Development

New Courses Developed

Spr. 2022 **AI for Artificial Worlds**, Informatics, NJIT.

New Course Manuals Developed

Spr. 2020 **Computer Graphics for Visual Effects**, Informatics, NJIT.

C. Research and Design Supervision

Graduated Doctoral Students Students

2020-2024 Yunhao Zhang, NJIT PhD in Information Systems, Crowd-Sourced Learning for Computer Graphics Applications

Graduate Students

2021- Bilas Talukdar, NJIT Informatics doctoral student, reinforcement learning of crowd movements

Thesis Committees

2024 Haotian Yin, NJIT Computer Science doctoral student, Advancing 3D Surface Reconstruction and Parametrization from Implicit

2024 Shen Fan, NJIT Computer Science doctoral student, Optimization of Quality and Efficiency for Reconstruction of Explicit 3D Geometry from Implicit Neural Representations of Geometric Shapes

2023 Bilas Talukdar, NJIT Informatics doctoral student, Deep Reinforcement Learning for Crowd Simulation with Crowds

2023 Li Yi, NJIT Informatics doctoral student, Learning Representations For Effective and Explainable Software Bug Detection and Fixing

2022- Yunhao Zhang, NJIT Informatics doctoral student, Sword fighting motion synthesis

2021 Raina Samuel, NJIT Informatics doctoral student, Android Security: Analysis and Applications

Doctoral Qualifying Exam Committees

2025 Kaiheng Zhang, NJIT Urban Systems doctoral student, Challenges of Generative Models in Architectural Design for Urban Systems

2023 Li Yi, NJIT Informatics doctoral student, Learning Representations For Effective and Explainable Software Bug Detection and Fixing

2022 Dahlia Musa, NJIT Informatics doctoral student, Virtual Healthcare Wound Care

2022 Bilas Talukdar, NJIT Informatics doctoral student, Learning Anticipatory Multi-Agent Navigation with Position-Based Deep Reinforcement Learning

2022 Wenbo Wang, NJIT Informatics doctoral student, QA4GIS: A Novel Approach Learning to Answer GIS Developer Questions with API Documentation

2021 Yunhao Zhang, NJIT Informatics doctoral student, Sword Fighting Motion Synthesis

2021 Raina Samuel, NJIT Informatics doctoral student, Android Security: Analysis and Applications

Undergraduate Students

2024 Matthew Loges, NJIT Computer Science student, Simulating Ant Aggregations

2024 Jeremy Convocar, NJIT Informatics student, Dense Flows in Crowd Simulation

2022 Audrey Bhea Obispo, NJIT Informatics student, Visualizing Collective Ant Dynamics

2022 Barr Beneli, NJIT Informatics student, Simulating Collective Ant Dynamics

2022 Elijah Brick, NJIT Computer Science student, Zebrafish Motion Dynamics Simulation

2021-2022 Tejasi Thool, NJIT Digital Design student, Spatial design for Promoting Mental Health and Well-being

2021 Anuraag Godavari, NJIT Computer Science student, Parallel and GPU Programming Methods for 3D Crowd Simulation

2021 Gianncarlo Carrasco Perez, NJIT Computer Science student, floorplan sketch completion with machine learning

2020-2021 Muhammed Waggeh, NJIT Informatics student, ant swarm simulation

2020 Hameedullah Farooki, NJIT Computer Science student, computational methods for architectural layout synthesis

2020 Donovan Westwater, NJIT Informatics student, scalable crowd simulation methods in games

High School Students

2024 Alexander Chen, Edge Cases in Crowd Simulation, The Academy of Math, Science and Engineering, Rockaway, NJ

2024 Derek You, Social Behaviors in Crowd Simulation, Edison Academy Magnet School, Edison, NJ

2022 Daniel Long, Simulating Agents Moving in Formations, Governor Livingston High School, Berkeley Heights, NJ

2022 Sai Voruganti, Estimating Style of 3D Shapes, John P. Stevens High School, Edison, NJ

VIII. Grants and Contracts

2022 Learning Deep Representations of Collective Behavior, PI, NJIT-Ben Gurion Seed Grant, 11/2022 to 11/2023, 1 year, $5,000

2022 Understanding Group Motion Dynamics with Reinforcement Learning, PI, NJIT Seed Research, 07/2022 to 06/2023, 1 year, $7,500

2021 Predicting Future and Past Spatial Macroscopic Collective Behaviors, PI, NJIT-Ben Gurion Seed Grant, 03/2021 to 03/2022, 1 year, $6,000

A. Grant Proposals Pending

2024 Simulating Virtual Agents for Scalable Interactive Experiences, Sony, 06/2025 to 06/2026, 5 year, $150,000

2024 CAREER: Simulating Living Systems for Computer Graphics Applications, PI, NSF, 6/2025 to 6/2030, 5 year, $600,000

IX. Public Recognition

2025 High School STEM Researcher and YWCC Mentor to Present at ACM SIGGRAPH Conference, New Jersey Institute of Technology News

2020 Meet the 2019-2020 New Faculty in Ying Wu College of Computing, New Jersey Institute of Technology News

2020 Featured New Faculty, New Jersey Institute of Technology Magazine, Spr. 2020

X. Service Activities

A. Department

AY 2023-2024 Informatics Department Faculty Candidate Interviewer.

AY 2022-2023 Informatics Department Faculty Candidate Interviewer.

AY 2022-2023 Informatics Department Chair Search Committee.

AY 2020-2021 Informatics Department Faculty Hiring Committee.

AY 2019-2020 Informatics Department Faculty Candidate Interviewer.

B. University

AY 2022-2023 NJIT Faculty Senate voting member

C. Government

2020 Panelist & Reviewer, National Science Foundation

2019 White Paper Contributor, Computing Community Consortium (CCC) Content Generation for Workforce Training workshop

D. Professional Societies

2019- Member: SIAM, ACM, SIGGRAPH, IEEE

E. Conference Organizing and Program Committees

2025 Conflict of Interest Coordinator, ACM SIGGRAPH Asia Technical Papers

2025 Program Committee Member, ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D)

2025 Local Chair, ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D)

2020, 25 Program Committee Member, Computer Animation and Social Agents (CASA)

2022–25 Program Committee Member, IEEE Artificial Intelligence and Virtual Reality

2022–25 Program Committee Member, IEEE International Conference on Computational Photography

2021 Organizing Committee, Workshop on Modeling and Animating Realistic Crowds and Humans (MARCH), IEEE International Conference on Artificial Intelligence & Virtual Reality (AIVR)

F. Peer Reviewing Activity

2025 Reviewer, ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D) (x1)

2025 Reviewer, SIGGRAPH (x1)

2024 Reviewer, Computer Animation & Virtual Worlds (x1)

2024 Reviewer, Eurographics (x1)

2024 Reviewer, Conference on Human Factors in Computing Systems (CHI) (x1)

2024 Reviewer, Computer Graphics Forum (x1)

2024 Reviewer, SIGGRAPH Asia (x1)

2024 Reviewer, SIGGRAPH (x2)

2024 Reviewer, Computers and Graphics (x1)
2023 Reviewer, Eurographics (x1)
2023 Reviewer, Computer Animation & Virtual Worlds (x1)
2023 Reviewer, Graphical Models (x1)
2023 Reviewer, Computer Graphics Forum (multiple)
2022 Reviewer, IEEE Conference on Virtual Reality (IEEE VR) (x1)
2022 Reviewer, ACM Symposium on Virtual Reality Software and Technology (VRST) (x1)
2022 Reviewer, MobileHCI 2022 Late Breaking Results (x1)
2022 Reviewer, EuroViz poster abstracts (x1)
2022 Reviewer, IEEE International Symposium on Mixed and Augmented Reality (ISMAR) (x1)
2021 Reviewer, International Conference on Robotics and Automation (ICRA) (x1)
2020 Reviewer, Eurographics (x2)
2020 Reviewer, Computer Animation and Virtual Worlds
2020 Panelist & Reviewer, National Science Foundation
2019 Reviewer, Computers & Graphics
2019 Reviewer, IEEE Access
2019 PC Member, Computer Animation and Social Agents (CASA)
2018 Reviewer, Eurographics
2018 Reviewer, ACM SIGGRAPH Asia
2018 Reviewer, Elsevier Applied Mathematical Modelling
2018 Reviewer, Journal of Visualized Experiments

G. Editorial Activity

2022 Guest Editor & Topic Coordinator, Frontiers Virtual Reality

H. Other Activity

2018- Reviewer, UCLA Engineering Undergraduate Scholarships

2014–2017 UCLA, Graduate Admissions Committee

2014–2017 UCLA, Computer Science Dept. Graduate Visiting Day Committee
Led Q&A panels, campus and department overview session

2014–2016 UCLA, Officer of the Engineering Graduate Student Division Association
Coordinated student events, volunteering, and outreach. Also in-charge of industry collaboration, and industry sponsored events

2014–2016 UCLA, Acting President of the Computer Science Graduate Student Committee
In charge of outreach, industry collaboration and student events. Coordinated company sponsored tea-time events, for recruiting computer science graduate students