Trudi Di Qi, Ph.D.

Assistant Professor, Electrical Engineering & Computer Science
Dale E. and Sara Ann Fowler School of Engineering,
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BRIEF

Dr. Trudi Qi is an Assistant Professor at the Fowler School of Engineering at Chapman University. Her research is at the intersection of computer graphics, extended reality (XR), and artificial intelligence (AI). She is particularly interested in integrating AI with visual computing technologies and connecting her research to human-centered endeavors such as education, training, and healthcare. Specifically, her research has been focusing on two main threads: 1) developing full-immersive, human-interactive, 3D computer graphics techniques to support intelligent creation, modeling, and animation of geometric data, and 2) integrating AI with XR technologies to provide real-time, intelligent assistance to human-computer interaction in an immersive environment.

EDUCATION

Ph.D. The Hong Kong University of Science and Technology, Mechanical Engineering, 2015
Thesis: "*OFN Surfel-Mesh: A Point-Neighborhood Representation Scheme for Complex Geometric Modeling*"

M.Sc. The Hong Kong University of Science and Technology, Intelligent Building Technology, 2009

B.Eng. Beihang University, Mechanical Engineering, 2007

PROFESSIONAL EXPERIENCE

08/2021 - Present **Assistant Professor,** Fowler School of Engineering
Chapman University, Orange, CA

01/2019 - 07/2021 **Research Scientist,** Center for Modeling, Simulation and Imaging in Medicine
Rensselaer Polytechnic Institute, Troy, NY

02/2016 – 12/2018 **Postdoctoral Research Associate,** Center for Modeling, Simulation and Imaging in Medicine
Rensselaer Polytechnic Institute, Troy, NY

02/2010 – 11/2015 **Graduate Research Assistant**, Computer-Aided Design Lab
The Hong Kong University of Science and Technology, Hong Kong

RESEARCH INTERESTS

Computer Graphics

- 3D modeling and animation
- 3D visualization and analytics

Machine Learning and Deep Learning

- Deep learning for human motion analysis
- Generative AI for 3D shape modeling

3D Interactions in XR

- Gesture-based 3D interface in XR
- Gesture-guided 3D content creation

Healthcare

- Physics simulation for medical/surgical training
- Visual/spatial computing for assistive technology

RESEARCH PROJECTS AND FUNDING

06/2024 - Present "*Gesture-to-3D: Human-Interactive Intelligent 3D Content Creation in Extended Reality*" (**ongoing**)
Funding source: Fowler Internal Fund | **Role: PI** | Chapman University
This project aims to develop an innovative gesture-guided generative shape modeling scheme for human-interactive intelligent 3D content creation to facilitate communication and ideation in XR:

- Design and develop a novel gesture-guided 3D generative AI.
- Develop a gesture-guided 3D content creation XR system.

08/2023 - Present "*VRWalking: Obstacle-Avoidance Walking Training in Virtual Reality*" (**ongoing**)
Funding source: Startup Fund | **Role: PI** | Chapman University (Co-PI: N. Sanchez, Crean College)
This project aims to develop an AI-guided VR system for gait training involving full-body obstacle navigation in an immersive environment aiming to assist with elder adults after stoking with their physical therapy and rehabilitation training:

- Design and develop a VR system working with full-body obstacle navigation support.
- Evaluate the training effectiveness of the VR system through human subject studies.
- Develop AI techniques to identify and predict individual obstacle-avoidance strategies.

06/2022 – Present "*MoViAn: A 3D Interactive Visual Analytics System for Multimodal Human Motion Analysis*" (**ongoing**)
Funding source: Research Seed Fund & Startup Fund **| Role: PI** | Chapman University
This project aims at developing an interactive 3D data visualization and annotation system for analyzing human motion data collected from multimodal tracking devices, levering human-in-the-loop and machine learning models, to enhance human behavior understanding:

- Develop 3D visualization and annotation techniques for multimodal human motion analysis.
- Develop machine learning-based clustering algorithms to automate human activity recognition and labeling.

06/2022 – Present "*VRelax: A VR System for Student Stress Relief*" (**ongoing**)
Funding source: Startup Fund **| Role: Co-PI**| Chapman University (Co-PI: F. Cibrian, Fowler Engineering)
This project aims to design and develop an immersive, biofeedback sensing system for student relaxation in virtual reality. This project comprises:

- Design a VR system equipped with biofeedback technologies that allows users to create visual expression and art in VR and receive personalized experience.
- Conduct a human subject study to investigate the system's feasibility and effectiveness.

10/2021 – Present "*VRMoVi: Towards an AI-Powered Human-Interactive Approach for VR Motion Visualization and Analysis*" (**ongoing**)
Funding source: 2022 Research Seed Fund **($20,000) | Role: PI** | Chapman University

This project aims to devise an expressive and interactive human motion data visualization and analysis platform, VRMoVi, to facilitate human-centered computing:

- Utilize effective 3D visualization to display complex high-dimensional human motion data collected from VR or other motion sensors.
- Support intuitive dual-hand gesture-based 3D interactions using deep learning.

08/2021 - 03/2022 "*Physically Realistic Virtual Surgery*" (**complete**)
Funding source: NIH R01EB005807 (Subaward: **$50,995**) **| Role: Co-I** | Chapman University
This project was to develop interactive virtual reality simulation technologies for surgical training.

- Devised and implemented real-time computation algorithms to realize different surgical operations based on the simulated human anatomy.
- Advised undergraduate students research on this project.
- led conference/journal papers.

2019 - 2021 "*Developing a Virtual Intelligent Preceptor (VIP) for Individualized Surgical Training*" (**complete**)
Funding source: Supplement grant of NIH-R01-EB025241 **| Role:** Senior Researcher | RPI
This project was to design and develop machine learning-based intelligent agents of VIP to assist with training and learning in VR simulation. My contributions:

- Developed a novel AI coaching system for medical training in VR.
- Led nationwide user studies to collect human performance data for machine learning.
- Collaborated with project partners at Harvard Medical School to evaluate and validate the training effectiveness of the VIP system in human subject studies.
- Engaged and advised graduate and undergraduate students on the project.

"*Physically Realistic Virtual Surgery*" (**complete**)
Funding source: NIH R01-EB00580709A1 **| Role:** Senior Researcher | RPI
This project was to design and develop a multi-user VR simulation for surgical team training, aiming to support geographically distributed users of different roles (e.g., surgeons, anesthesiologist etc.) to be present in the same virtual operating room and cooperate with one another to successfully complete a surgical procedure. My roles:

- Advised undergraduate research investigating reinforcement learning-based methods to physically simulated body that can naturally interact with the virtual environment.
- Mentored PhD research on investigating simulation technologies for medical team training.

"*Development and Validation of a Virtual Colorectal Surgical Trainer (VCoST)*" (**complete**)
Funding source: NIH-R01-EB025241 **| Role:** Lead Researcher & Developer | RPI
This project was to design and develop a high-fidelity and high-realism virtual colorectal surgical trainer of five open surgery tasks. Responsibilities:

- Devised innovative physics-based modeling and animation techniques to realize real-time contact detection, response handling, and physical simulations of soft tissues.
- Collaborated with research partners from other institutions.
- Led conference/journal publications.

2016 – 2018 "*Development and Validation of a Virtual Airway Skill Trainer (VAST)*" (**complete**)
Funding source: NIH-R01-HL119248 **| Role:** Lead Researcher & Developer | RPI
This project was to design and develop a virtual airway skill trainer for an emergency airway surgical procedure - cricothyrotomy to enable a user to interact and perform surgery on the virtual patient through hand-held haptic interface. My contributions:

- Led simulation system development and proposed a novel cutting simulation approach that enables interactive progressive cutting of soft tissues.
- Collaborated with clinical experts at Harvard Medical School and Baylor Medical Center.
- Held workshop at national medical conferences to showcase the simulator.
- Led conference/journal publications.

2016 - 2018 "*Advanced virtual simulator for fundamentals of laparoscopic surgery training and credentialing*" (**complete**)

Funding source: NIH R44-EB019802 **| Role:** Lead Researcher & Developer | Kitware Inc.

This project was to develop a computer based virtual basic laparoscopic skill trainer - suturing simulator, which offers an interactive and high-fidelity training environment for medical students to practice suturing with intracorporeal knot tying skill. Contributions:

- Developed an interactive virtual intracorporeal suturing simulator for the first time.
- Mentored Ph.D. research on efficient methods for suture self-collision and handling.
- Led conference/journal publications.

2010 – 2015 "*A Computer-Aided Design System for Jewelry Design - JewelCAD Pro*" (**complete**)

Funding source: Hong Kong government Innovation and Technology Fund UIM/ 210 **| Role:** Graduate Research Assistant | HKUST

This project was to develop an interactive computer-based jewelry design and prototyping platform, JewelCAD Pro, in which jewelry models were usually presented by complex shapes requiring efficient modeling computation method. My contributions:

- Proposed advanced GPU-based 3D complex geometries modeling as part of Ph.D. thesis, overcoming the most challenging problem in the project.
- Participated into the development of commercial CAD software for jewelry design.

SERVICE AND PROFESSIONAL ACTIVITIES

2024

Advisory Board Committee, Library Research & Data Services (LRDS), Chapman University

- Provide expertise and feedback to help enhance the University's research capabilities and data services to support data-intensive research in areas such as data analysis, visualization, and AI/ML/DL.

EECS Graduate Program Committee, Fowler School of Engineering, Chapman University

- Work with committee chair and members to develop strategies aimed at attracting a diverse and increasing enrollment of qualified graduate candidates to this new program.
- Review program handbook, policies, and curriculum to enhance quality and competitiveness.
- Offer professional development opportunities to graduate students.

Reviewer, Scientific Reports (Nature)

Reviewer, The Journal of Human-Computer Interaction

Reviewer, Review Journal of Autism and Developmental Disorders

Reviewer Committee, 13th Annual IEEE GameSIG Intercollegiate Computer Game Competition 2024

Faculty Mentor, 2024 Summer Undergraduate Research Fellowship (SURF), Center for Undergraduate Excellence (CUE), Chapman University

- Mentored undergraduate students to develop an AI-assisted VR gait training system.
- Advised students to disseminate their research outcomes at national and international research symposiums and conferences.

2023

NSF Panelist, IIS: Human-Centered Computing, National Science Foundation

Reviewer of IEEE VR 2024

Faculty Mentor, 2023 Summer Undergraduate Research Fellowship (SURF), Center for Undergraduate Excellence (CUE), Chapman University

- Mentored undergraduate students to conduct hands-on research on VR data visualization.

- Advised students to disseminate their research outcomes at national and international research symposiums and conferences.

Seminar Committee, Fowler School of Engineering, Chapman University.

- Invited experts from engineering and healthcare to present the latest breakthroughs in technology and share their experiences with Chapman students and faculty.
- Engaged students in seminar discussions with speakers and fostered research opportunities.
- Worked with the Committee Chair and staff to organize the seminars.

2022 **Reviewer**, Computer Animation and Virtual World, Wiley

Reviewer, IEEE VR 2023

2021 **Faculty mentor and reviewer,** Center for Undergraduate Excellence (CUE), Chapman University
Duties include:

- Participate in the Undergraduate Faculty Mentor Directory, prepare and maintain the latest research profile to expand undergraduate research opportunities.
- Serve as a reviewer for CUE's Funding Program - SURF and make comments and suggestions to research proposals from students interested in doing summer research with faculty.
- Participate in Faculty Research and Creative Scholars Expo to meet with students potentially interested in doing research (to be held in 2022.09).

Member, Diversity, Equity, and Inclusion (DEI) Committee, Fowler School of Engineering, Chapman University. Duties include:

- Assist and advise Faculty/Staff/Students in development and implementation of DEI fund award projects.
- Supporting faculty/staff/students in designing and deploying their DEI activities.
- Collecting and reporting DEI-related issues and making recommendations to the school's leadership, leading to actionable plans.

Member, National Center for Faculty Development & Diversity (NCFDD)

Reviewer of IEEE Access

2020 **Reviewer** of Education and Simulation Track of *International Symposium on Human Factors and Ergonomics in Health Care*

2019 **Visiting Faculty,** *Learning Center of Society of American Gastrointestinal and Endoscopic Surgeons Annual Conference, Baltimore, MD, USA*

Hosted a VR learning workshop:

- Showcased an AI-assisted VR-based medical training system as a lead developer.
- Conducted a human-subject study to investigate the training effectiveness of the system with the project partners at Beth Israel Deaconess Medical Center and Harvard Medical School.

2018 **Visiting Faculty,** *Learning Center of Society of American Gastrointestinal and Endoscopic Surgeons Annual Conference, Seattle, WA, USA*

Hosted a VR learning workshop:

- Showcased a virtual airway skill training simulator as a lead developer.
- Collaborated with military medical professionals from Charles A. Anderson Simulation Center conducting a human-subject study to validate the simulator.

2016 **Visiting Faculty,** *9th Annual ACS-AEI Postgraduate Course, Boston, MA, USA*

Co-Hosted a VR workshop:

- Presented the latest techniques for developing immersive VR environment for medical training and education

2014 **Co-organizer,** *CAD Conference and Exhibition, Hong Kong*

Reviewer of *CAD Conference and Exhibition*

Reviewer of *Rapid Prototyping Journal*

TEACHING EXPERIENCE

2025 Spring **Instructor**, "CPSC 515: Computer Graphics and Computational Geometry", Chapman University

Instructor, "CPSC 360: Computer Graphics", Chapman University

2024 Fall **Instructor,** "CPSC 230: Computer Science I", Chapman University

2024 Spring **Instructor,** "CPSC 360: Computer Graphics", Chapman University

2023 Fall **Instructor,** "CPSC 230: Computer Science I", Chapman University

2023 Spring **Instructor,** "CPSC 360: Computer Graphics", Chapman University

2022 Fall **Instructor,** "ENGR101: Foundations of Design and Fabrication", Chapman University

2022 Spring **Instructor,** "CPSC 360: Computer Graphics", Chapman University

2021 Fall **Instructor,** "ENGR101: Foundations of Design and Fabrication", Chapman University

2013 Fall **Teaching Assistant**, The Hong Kong University of Science and Technology
"*Design and Manufacturing*" - Instructor: Prof. Matthew Yuen

2012 Spring **Teaching Assistant**, The Hong Kong University of Science and Technology
"*Numerical methods in Engineering*" - Instructor: Prof. Kai Tang

2011 Fall **Teaching Assistant**, The Hong Kong University of Science and Technology
"*Design and Manufacturing*" - Instructor: Prof. Matthew Yuen

SELECTED PUBLICATIONS AND PRESENTATIONS

Book Chapter

2023 C. Jackson, **D. Qi**, S. De, "Distributed Debriefing for Simulation based Training", *Human Factors in Simulation and Training*, 2nd Edition, CRC Press, https://doi.org/10.1201/9781003401360.

2020 N. Milef, **D. Qi**, S. De, "Rendering Surgical Simulation with Vulkan", *GPU Zen 2: Advanced Rendering Techniques. Black Cat Publishing*

Journal Articles

2024 M. Turkseven, **T.D. Qi**, G. San., S. De, "Palpation Characteristics in a Virtual Cricothyroidotomy Simulator with an Instrumented Interface", *under review*.

J. Chen, **T.D. Qi**, F. Liu, & Y. Wen, "Deep Convolutional Network Compression using Tucker Decomposition and Filter Pruning", *under review*.

T.D.Qi, F. Cibrian, M. Raswan, T. Kay, H.M. Camarillo-Abad & Y. Wen, "Deep Learning-Based Dual-Hand Gesture Recognition Towards 3D Interactions in Virtual Reality", *IEEE Access*, https://doi.org/10.1109/ACCESS.2024.3400295.

2023 J. Chen, **T.D. Qi**, J. Vu, & Y. Wen, "A Deep Learning Approach for Inpatient Length of Stay and Mortality Prediction", *Journal of Biomedical Informatics*, https://doi.org/10.1016/j.jbi.2023.104526

D. Qi and S. De, "Split & Join: An efficient approach for simulating stapled intestinal anastomosis in virtual reality", *Computer Animation and Virtual Worlds*, https://doi.org/10.1002/cav.2151.

2022 G. San., C. Odlozil, S. Hasan, R. Shabbir, **D. Qi**, et al, "Training on a Virtual Reality Cricothyroidotomy Simulator Improves Skills and Transfers to a Simulated Real-World Procedure", *Journal of Trauma Surgery and Acute Care Open*, https://doi.org/10.1136/tsaco-2021-000826

2021 N. Milef, A. Ryason, **D. Qi**, et al, "Disruptions to Shared Mental Models from Poor Quality of Service in Collaborative Virtual Environments", *Scientific Reports,* https://doi.org/10.1038/s41598-021-02567-7.

H. Truong, **D. Qi**, A. Ryason, et al, "Does your team know how to respond safely to an operating room fire? Outcomes of a virtual reality, AI-enhanced simulation training", *Surgical Endoscopy,* https://doi.org/10.1007/s00464-021-08602-y

2020 **D. Qi**, N. Melif, S. De, "Divided Voxels: An Efficient Algorithm for Interactive Cutting of Deformable Objects", The Visual Computer, https://doi.org/10.1007/s00371-020-01856-y

D. Qi, E. Petrusa, U. Kruger, et al, "Surgeons with Five or More Actual Cricothyrotomy Preform Significantly Better on VR Simulator", *Journal of Surgical Research,* https://doi.org/10.1016/j.iss.2020.03.021

D. Qi, A. Ryason, N. Milef, et al, "Virtual reality operating room with AI guidance: design and validation of a fire scenario", *Surgical Endoscopy,* https://doi.org/10.1007/s00464-020-07447-1.

2019 Y. Fu, L. Cavuoto, **D. Qi**, et al. "Characterizing the learning curve of a virtual intracorporeal suturing simulator (VBLaST-SS)", *Surgical Endoscopy,* https://doi.org/10.1007/s00464-019-07081-6.

2018 Y. Fu, L. Cavuoto, **D. Qi**, et al, "Validation of a virtual intracorporeal suturing simulator", *Surgical Endoscopy,* https://doi.org/10.1007/s00464-018-6531-3.

2017 **D. Qi**, K. Panneerselvam, W. Ahn, et al, "Virtual interactive suturing for the Fundamentals of Laparoscopic Surgery (FLS)", *Journal of Biomedical Informatics*, https://doi.org/10.1016/j.jbi.2017.09.010.

2013 **D. Qi**, L. Zeng, M. F. Yuen, "Robust slicing procedure based on Surfel-Grid", *Computer-Aided Design and Applications*, https://doi.org/10.3722/cadaps.2013.965-981.

2011 L. Zeng, L.M. Lai, **D. Qi**, Y. H. Lai, M. F. Yuen, "Efficient slicing procedure based on adaptive layer depth normal image", Computer-Aided Design, https://doi.org/10.1016/j.cad.2011.06.007.

Peer-reviewed Conference Publications

2025 D. Zhang, K. Ho, T. Kay, H.M. Camarillo-Abad, **T.D. Qi*** & F.L. Cibrian*, "Exploring the Design Space of VR to Support Relaxation for Young Adults", *under review*.

2024 **T.D. Qi**, I. Browen, H.M. Camarillo-Abad & F.L. Cibrian, "MoViAn: Advancing Human Motion Analysis with 3D Visualization and Annotation", 16th International Conference on Ubiquitous Computing & Ambient Intelligence (UCAmI'24), https://doi.org/10.1007/978-3-031-77571-0_2.

I. Browen, H.M. Camarillo-Abad, F.L. Cibrian & **T.D.Qi***, "Creative Insights into Motion: Enhancing Human Activity Understanding with 3D Data Visualization", ACM Creativity and Cognition (C&C'24), Chicago, IL, USA. (***senior/corresp. author**) https://doi.org/10.1145/3635636.3664256.

2023 **T.D. Qi**, L. Boyd, S. Fitzpatrick, M. Raswan, & F. Cibrian, "*Towards a Virtual Reality Visualization of Hand-Object Interactions to Support Remote Physical Therapy*", 15th International Conference on Ubiquitous Computing & Ambient Intelligence (UCAmI'23), Cancun, Mexico. **Best Paper Award**. https://doi.org/10.1007/978-3-031-48306-6_14.

M. Raswan, T. Kay, H.M. Camarillo-Abad, F.L. Cibrian*, & **T.D. Qi***, "Guess the Gesture: Uncovering and Intuitive Gesture-based User Interface for 3D Content Interaction in Virtual Reality", ACM Creativity and Cognition (C&C'23), Virtual Event, USA. (***senior/corresp. author**) https://doi.org/10.1145/3591196.3596610.

T. Kay, M. Raswan, H.M. Camarillo-Abad, **T.D. Qi***, & F.L. Cibrian*, "Using Virtual Reality to Foster Creativity for Co-design a New Self-Expression and Relaxation Virtual Environment for Students", ACM Creativity and Cognition (C&C'23), Virtual Event, USA. (***senior/corresp. author**) https://doi.org/10.1145/3591196.3596611.

2022 Scott Fitzpatrick and **D. Qi***, "An expressive approach for visualizing human motion data in virtual reality", *Southern California Undergraduate Research Conference (SCURC)*, poster presentation. (***senior/corresp. author**)

2021 **D. Qi,** X.T. Sun, A. Ryason, et al., "An Efficient Simulation Approach for Virtual Interactive Colorectal Anastomosis", *Society for American Gastrointestinal and Endoscopic Surgeons Annual Meeting* - The Next Big Thing, Las Vegas, NV, USA.

2020 **D. Qi**, Z.T. Yang, S. Alfred, et al., "Virtual Intelligent Preceptor (VIP) - A Virtual Intelligent Surgical Coaching System", *BIDMC Artificial Intelligence/Machine Learning Symposium*, Poster, Boston, MA, USA.

D. Qi, A. Ryason, N. Milef, et al., "An AI-assisted OR Fire Training Simulator: Design and Face Validation", *Society for American Gastrointestinal and Endoscopic Surgeons Annual Meeting*, ePoster, Cleveland, OH, USA.

2019 **D. Qi**, U. Kruger, N. Milef et al., "Validation of a Virtual Cricothyrotomy Simulator *VAST-CCT"*, *Society for American Gastrointestinal and Endoscopic Surgeons Annual Meeting*, ePoster, Baltimore, MA, USA.

Y. Fu, L. Cavuoto, **D. Qi**, et al., "Characterizing the Learning Curve of a Virtual Intracorporeal Suturing Simulator", *Society for American Gastrointestinal and Endoscopic Surgeons Annual Meeting*, Podium presentation, Baltimore, MA, USA.

C. Odlozil, R. Shabbir, **D. Qi**, et al., "Training on a Virtual Reality Cricothyrotomy Simulator Improves Skills and Transfers to a Simulated Real-World Procedure", *American Association for the Surgery of Trauma Annual Meeting*, ePoster, Dallas TX, USA.

2018 Y. Fu, L. Cavuoto, **D. Qi**, et al. "Validation of a Virtual Intracorporeal Suturing Simulator", *Society for American Gastrointestinal and Endoscopic Surgeons Annual Meeting*, ePoster, Seattle, WA, USA.

2013 **D. Qi**, L. Zeng, M. F. Yuen, "Robust slicing procedure based on Surfel-Grid", *CAD Conference and Exhibition*, Podium presentation, Bergamo, Italy.

STUDENT MENTORING ACTIVITIES

Undergraduate Research Advising

2024 - Present **Kallen Lonbom** – Computer Science, Chapman University

- Research topic "Gesture-to-3D: *Human-Interactive Intelligent 3D Content Creation in Extended Reality*" (**ongoing**)

2024 - Present **Alexandra Fomina** – Software Engineering, Chapman University

- Research topic "*VRWalking: Obstacle-Avoidance Walking Training in VR*" (**ongoing**)
- **2024 Summer Undergraduate Research Fellowship Awardee ($4,000)**
- **2024 Scholarly/Creative Grant Awardee ($1,000)**
- **Presented at the 2024 Southern California Undergraduate Research Conference**, San Bernadino, CA.

2024 - present **Quillan Gee** – Computer Science & Game Development, Chapman University

- Research topic "*VRWalking: Obstacle-Avoidance Walking Training in VR*" (**ongoing**)
- **Presented at the 2024 Southern California Undergraduate Research Conference**, San Bernadino, CA.

2024 - present **Laurel Latt** – Software Engineering, Chapman University

- Research topic "*VRWalking: Obstacle-Avoidance Walking Training in VR*" (**ongoing**)
- **Presented at the 2024 Southern California Undergraduate Research Conference**, San Bernadino, CA.

2023 - present **Isaac Browen** – Computer Science & Game Development, Chapman University

- Research topic "*MoViAn: A 3D Interactive Visual Analytics System for Multimodal Human Motion Analysis*" (**ongoing**)
- **2023 Summer Undergraduate Research Fellowship Awardee ($4,000)**
- **2024 Undergraduate Research Excellence Travel Grant ($3,000)**
- **First-author & co-author** of peer-reviewed conference papers
- **Presented at the 2023 Undergraduate Research Symposium**, Chapman University
- **Presented at 2024 ACM Cognition and Creativity Annual Conference**, Chicago, IL

2023 - present **Katie Ho** – Computer Science & Game Development, Chapman University

- Research topic "*VRMoVi: Towards an AI-Powered Human-Interactive Approach for VR Motion Visualization and Analysis*" (**ongoing**)
- **Presented at the 2024 Southern California Undergraduate Research Conference**, San Bernadino, CA.

2023 - 2024 **Gabe Di Capitani** – Broadcast Journalism and Documentary & VR/AR, Chapman University

- Research topic "*VRWalking: Obstacle-Avoidance Walking Training in VR*", co-advisor: Dr. N. Sanchez (**complete**)

2023 **Andriana Agrusa** – Computer Science & Visual Effect, Chapman University

- Research topic "*VRWalking: Obstacle-Avoidance Walking Training in VR*", co-advisor: Dr. N. Sanchez (**complete**)

2021 - 2023 **Meghna Raswan** - Computer Science & Visual Effect, Chapman University

- Research topic "*VRMoVi: Towards an AI-Powered Human-Interactive Approach for VR Motion Visualization and Analysis*" (**complete**)
- **2022 Robert A. Day Research Grant Awardee ($8,000)**
- **First-author & co-author** of peer-reviewed conference papers
- **Presented at 2023 ACM Cognition and Creativity Annual Conference**, Virtual Event.

2022 - 2023 **Tyler Kay**- Computer Science, Chapman University

- Research topic "*VRelax*", co-advisor: Dr. F. Cibrian (**complete**)
- **First-author & co-author** of peer-reviewed conference papers
- **Presented at 2023 ACM Cognition and Creativity Annual Conference**, Virtual Event

2022 – 2023 **Joseph Ellis** - Data Science, Chapman University

- Research topic "*VR data processing and analysis"* (**complete**)
- **Presented at 2022 Undergraduate Research Symposium**, Chapman University

2022 - 2023 **Dylan McIntosh** - Data Science, Chapman University

- Research topic "*VR data processing and analysis*" (**complete**)
- **Presented at 2022 Undergraduate Research Symposium**, Chapman University

2022 - 2023 **Scott Fitzpatrick** - Computer Science, Chapman University

- Research topic "*VRMoVi: Towards an AI-Powered Human-Interactive Approach for VR Motion Visualization and Analysis*" (**complete**)
- **Presented at 2022 Southern California Undergraduate Research Conference**, Malibu, CA, November 19, 2022.
- **Co-author** of peer-reviewed conference paper
- **2022 FoSE Student Travel Awardee ($1,000)**

2022 **Yuki Chen** - Data Science, Chapman University

- Research topic "*VR data processing and analysis* " (**complete**)

2022 **Katie Tang** - Business Management, Chapman University

- Research topic "VR data recording for *VRelax*", co-advisor: Dr. F. Cibrian (**complete**)

2021 **Lucas Torti** - Software Engineering, Chapman University

- Research topic "Physics-based simulation for surgical sutures", Physically Realistic Virtual Surgery (**complete**)

2021 Spring **Tyler Kaulft** - Biomedical Engineering, Rensselaer Polytechnic Institute

- Research topic "*Developing AI-assisted VR simulation for OR team preparation for COVID-19 patients*", VORTEX (**complete**)

2020 Fall **Xiatao Sun** - Mechanical Engineering, Rensselaer Polytechnic Institute

- Research topic "*Reinforcement learning-based task-oriented virtual humanoid character control*". This was a part of an ongoing NIH project for multi-user virtual team training simulator, VORTEX (**complete**)
- Research topic "*Developing a highly realistic and interactive multi-player virtual operating room for surgical team training*", VORTEX (**complete**)

2019 Spring **Daniel Zhu** - Computer Science, Rensselaer Polytechnic Institute

- Research topic *"Using machine learning to predict full-body pose with VR input"* (**complete**)

2019 Spring **Zhentao Yang** - Computer Science, Rensselaer Polytechnic Institute

- Research topic *"Deep learning-based image anti-aliasing"* (**complete**)
- Research topic *"Using machine learning techniques to predict user actions in VR"* (**complete**)

2019 Spring **Minjia Huang** - Computer Engineering, Rensselaer Polytechnic Institute

- Research topic *"Enhancing ultrasound images using deep learning"* (**complete**)

2019 Spring **Euan McInally** - Computer Science, Rensselaer Polytechnic Institute

- Research topic "*Denoising real-time ambient occlusion"* (**complete**)

Graduate Research Mentoring and Advising

2024 - Present

Olivia Chilvers (F.L. Cibrian), EECS, Fowler Engineering, Chapman | **Role**: **Thesis Committee**

- Research topic "*Connecting the Montessori philosophy through EdTech*"

Briana Craig (L. Boyd), EECS, Fowler Engineering, Chapman | **Role**: **Thesis Committee**

- Research topic "*Reducing stigma around neurodiversity through the user of celebratory technology ice breakers in first-year undergraduate classrooms*"

Trey Alexander (T. Springer), EECS, Fowler Engineering, Chapman | **Role**: **Thesis Committee**

- Research topic "*Designing and implementation of a modular avionics architecture for autonomous systems*"

2019 Fall

Xinwen Zhang - Ph.D. student, Mechanical Engineering, RPI **| Role: Mentor**

- Research topic "*Natural language processing-based AI-assistance for effective team communication in VR*", VORTEX (**complete**)

2018 Fall

Samuel Alfred - Master student, Mechanical Engineering, RPI **| Role: Mentor**

- Research project "Developing a virtual intelligent preceptor for individualized surgical training", VIP (**complete**)

REFERENCES

Available upon request.