



Jennifer C. Cremer

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Education

University of Florida, Herbert Wertheim College of Engineering

Ph.D, Computer Graphics & Visualization

Expected 2026

Relevant Courses: Concurrent Programming, Comp. Graphics, Info. Visualization, Multimodal Data Mining

MSc, Computer Science

2018 – 2021

BS, Digital Arts & Science

2014 – 2018

External focus in Applied Physics: Statics, Thermodynamics, Fluid Mechanics

Technical Skills

Programming Languages:

C++, C#, Python, Java, OpenGL, WebGL, HLSL, Bash, JavaScript

Software Packages & Tools:

Unity 3D, OpenXR, Qt, PyTorch, Adobe CC Suite, Autodesk Maya, Blender

Research Experience

Graduate Student Researcher

2018 – Present

Scan2Twin – Jörg Peters: *Surflab & Eric Ragan: INDIE Lab, Dept. of CISE, UF*

- Refactored orphaned VR software to adhere to proper data handling, object-oriented paradigms, and modern UX guidelines
- Developed C++/OpenGL software for virtual reality (VR) to voxelate medical images and trace out vessels as B-spline curves
- Converted project base from C++/OpenGL/OpenVR to the Unity3D Engine and C#
- Developed VR toolsets for spatial understanding and interactive modeling of voxel data
- Demonstrating functionality and visualization prototypes of anatomy to surgical teams
- Managing project definitions and scope with collaborators in the Colorectal Oncology Team at UF Health: Shands
- Integrated Segment Anything using PyTorch into Unity to assist in volumetric noise reduction
- Integrated responsive shrink-wrapping methods to transform voxel clouds into discrete meshes
- Designed and conducted a Mixed-Factorial User Study on the impacts of modeling experience on efficiency and accuracy of mesh editing in VR and desktop interfaces
- Investigating capabilities of Skeleton Extraction methods using Pytorch to improve meshing process
- Designing a Mixed-Factorial User Study exploring the aptitude of various Volumetric Rendering techniques given different investigative tasks

Redirected Walking Study – Brett Benda: *INDIE Lab, Dept. of CISE, UF*

2024

- Assisted execution and analysis of a Between-Subject VR Study investigating impacts of technique awareness on translation gain detection and thresholds

Undergraduate Researcher

2017 - 2018

TIPS – Jörg Peters: *Surflab*

- Developed a custom file format to store mesh data as well as scene hierarchy relationships
- Created a Python script for Blender to parse custom files of mesh data and object hierarchy into soft-body surfaces with spring constraints
- Developed user-report interfaces for surgical simulation software with screen captures and descriptions of key training moments using Qt
- Acted as interlocutor for an interdisciplinary team with the UF Veterinary School

Teaching Experience

Dept. of Computer & Information Science & Engineering, Univ. of FL

Graduate Teaching Assistant

2018 - Present

Fundamentals of Computer Graphics, Information Visualization, Intro to Computational Media, AI for Computer Games, Operating Systems, Advanced Fundamentals, Data Structures and Algorithms

UF at Kyoto University Summer Abroad Program

2022

Instructor on record

2020 - 2021

Performant Programming in Python

2021

Design Patterns in Object-Oriented Programming

2020, 2021

Mentoring & Volunteering

SURFLab Undergraduate Student Research Coordinator

2018 - Present

Project manager to multiple mixed groups of students working on both independent projects and dissertation subprojects

Academy Software Foundation: Diversity & Inclusion Working Group

2020 - Present

SIGGRAPH Birds of a Feather

2025

SIGGRAPH Student Volunteer Info Session

2024, 2025

Summer Learning Program Organization Team

2023, 2024, 2025

DevDays Volunteer

2023

Student Volunteer for ACM SIGGRAPH

2023, 2024

Team Lead, Academy Software Foundation Summer Learning Program

2021, 2022

VFX Careers Webinar Series, Academy Software Foundation - Virtual

2021

University panelist for "VFX Careers: Technical Director"

Lead presenter for "University Content: Building from Source with Cmake"

Conferences & Papers

Scan2Twin: Virtual Reality for Enhanced Anatomical Investigation

IEEE Conference on Virtual Reality and 3D User Interfaces (IEEEVR 2024) (Doctoral Consortium)

Jennifer C. Cremer

Immersive VR 3D Model for Rectal Cancer Robotic Surgery

American Society of Colon and Rectal Surgeons via Intuitive Research - 2023 - Video Abstract

P. Mazirka, J. Cremer, J. Balch, A. Rashid, K. Ehresmann, L. Goldstein, J. Nordenstam, T.E. Read, J. Grajo, J. Peters, K. Terracina

Patient-Specific MRI VR Model Construction and Simulation

Women in Scientific Computing on Complex Physical and Biological Systems (Poster) - 2022 - Gainesville, FL

Jennifer C. Cremer, Jörg Peters

From Scans & Model Collections to Interactive Surgical Simulation

ACS Surgeons and Engineers 2021 - Poster

Jennifer Cremer, Ruiliang Gao, Krista Terracina MD, Jörg Peters

Grants & Awards

Research in Robotic Technology Grant - Research Foundation of the ASCRS

2021-2023

CISE Department Nominee, Outstanding Graduate Teaching Assistant Award, UF

2020

NSF GRFP Honorable Mention, Computer Graphics and Visualization

2020

Extracurricular

WarHammer Miniature Painting

2023 – Present

Advanced Open-Water SCUBA Diving – PADI certification

2016 – Present

Amateur Wildlife Photography – birds in flight & macro bugs

2012 – Present