Jennifer C. Cremer

Education

University of Florida, Herbert Wertheim College of Engineering — *Gainesville, FL*

Ph.D, Computer Graphics & Visualization — Expected 2025

Relevant Courses: Concurrent Programming, Multimodal Data Mining

MSc, Computer Science — 2018 – 2021

BS, Digital Arts & Science — 2014 – 2018

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

Research Experience

Jörg Peters - SurfLab, Dept. of CISE, UF

Graduate Student Researcher — 2018 – Present

Undergraduate Researcher — 2017 - 2018

- Refactored orphaned virtual reality (VR) software to adhere to proper data handling, object-oriented paradigms, and modern user-experience(UX) guidelines.
- Developed a custom file format to store mesh data as well as scene hierarchy relationships.
- Created a Python script for Blender to parse a custom file format to convert from mesh data and object hierarchy to soft-body surfaces with spring constraints.
- Developed report user interfaces for surgical simulation software that included screen captures of key training moments and descriptions using Qt.
- Acted as interlocutor for an interdisciplinary team with the UF Veterinary School
- Developed C++/OpenGL software for virtual reality (VR) to voxelate medical images and trace out vessels as B-spline curves.
- Converted entire project base from C++/OpenGL/OpenVR to the Unity3D Engine and C#
- Developed a virtual reality (VR) platform using Unity3D for spatial understanding and interactive modeling of CT and MRI imagery into soft body simulation models.
- Created voxelated prototype models of organ structures using machine learning techniques and ran demonstrations of the visualization with surgical teams.
- Managed project definitions and scope with collaborators in the Colorectal Oncology Team at UF Health: Shands.
- Advisor to seven undergraduate semester sub-projects for four different students.

Teaching Experience

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

Graduate Teaching Assistant — 2018 - 2022

UF at Kyoto University Summer Abroad Program — 2022

Instructor on record — 2020 - 2021

CIS4930: Special Topics in CISE – Performant Programming in Python — 2021

CIS4930: Special Topics in CISE - Design Patterns in OOP — 2020, 2021

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Mentoring & Volunteering

Student Volunteer for ACM SIGGRAPH 2023

Team Lead, Academy Software Foundation Summer Learning Program 2021, 2022

Led a small group of learners during the program to stay organized, build community, solve technical roadblocks, and optimize meetings with industry mentors.

2021: Ximena Jaramillo, JaNiece Campbell, Jessica Zhou, Linda Lam

2022: Parag Gupta, Stephanie Lim

Academy Software Foundation: Diversity & Inclusion Working Group 2020 - Present

Member, University Liaison, University of Florida

Summer Learning Program Organization Team 2023

Conferences & Papers

Women in Scientific Computing on Complex Physical and Biological Systems 2022

Gainesville, FL

"Patient-Specific MRI VR Model Construction and Simulation", Poster

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"

ACS Surgeons and Engineers - Virtual 2021

"From Scans & Model Collections to Interactive Surgical Simulation", Poster

Academic Surgical Congress - Orlando, FL 2020

"VascularVR", SurfLab Exhibitor

Grants & Awards

Research in Robotic Technology Grant - Research Foundation of the ASCRS 2021-2023

CISE Department Nominee, Outstanding Graduate Teaching Assistant Award, UF 2020

Student Participation Award, MICCAI 2020, 2021

NSF GRFP Honorable Mention, Computer Graphics and Visualization 2020

Technical Skills

Programming Languages:

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

Software Packages & Tools:

Adobe Creative Cloud Suite, Autodesk Maya, Blender, Qt, SteamVR, Unity 3D

Extracurricular

Advanced Open-Water SCUBA Diving – PADI certification 2016 – Present

Amateur Wildlife Photography – Nikon D7000 w/ 18mm-200mm 2012 – Present