Jennifer C. Cremer

ferbycremer@gmail.com | https://www.linkedin.com/in/jennifer-cremer | https://ferbycremer.github.io/

Education

University of Florida, Herbert Wertheim College of Engineering

Ph.D, Computer Graphics & Visualization — Expected 2026

Relevant Courses: Adv. Computer Graphics, Multimodal Data Mining

MSc, Computer Science — 2018 – 2021

Relevant Courses: Concurrent Programming, Computer Graphics, Geometric Modeling, Information Visualization

BS, Digital Arts & Science — 2014 – 2018

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

Relevant Courses: Design Patterns, Obj. Oriented Programming, Theory & Practice of Multimedia Production, Op. Systems, 3D Modeling & Animation, Human-Computer Interaction

Research Experience

Jörg Peters - SurfLab, Depart. of Computer & Information Science & Engineering, UF

Graduate Student Researcher — 2018–Present

- Refactored existing project code to adhere to proper data handling, object-oriented paradigms, and make use of modern user-experience guidelines
- Developed C++/OpenGL software for virtual reality (VR) to voxelize medical images and trace out vessels as Bspline curves
- Managed a small group to convert software from C++/OpenGL/OpenVR to the Unity3D engine and C#
- Developing a virtual reality (VR) platform for spatial understand and interactive modeling of medical images such as CT and MRI into soft body simulation models
- Create voxelized prototype models of organ structures and run demonstrations of the visualization with surgical teams
- Managing project definitions and scope with collaborators with the Colorectal Oncology Team at UF Health: Shands

Undergraduate Researcher — 2017–2018

- Created a Python script to parse custom file formats to convert from vertices to soft-body meshes
- Developed report user interfaces for surgical simulation software(TIPS) that included screen captures of key training moments and descriptions
- Adaptation of interdisciplinary communications with collaborators at the UF Veterinary School

Teaching Experience

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

Graduate Teaching Assistant 2018—2024

UF at Kyoto University Summer Abroad Program 2022

CIS4930 - Performant Programming in Python, CIS4930 - Cross-Cultural Engineering

- Assisted the professor in course organization and student affairs
- Helped organize and execute excursion trips as examples of sensitive engineering in life
- Mentored students through office hours and one-on-one communication.
- Developed original assignment specifications and materials
- Provided grades according to university standards

Graduate Teaching Assistant (General) 2018–2021

- Assisted the professor with course management and individual student affairs
- Proctored tests and provided grades according to university standards
- Mentored students through office hours and one-on-one communication
- Developed project specifications, lab assignments, and grading protocols
- Taught lab sections covering review and supplemental materials

Courses:

*CAP5705 - Fundamentals of Computer Graphics***	*2022*
CIS6930 – Special Topics: Information Visualization	*2022*
*COP3504C – Adv. Programming Fundamentals***	*2021*
*CIS4930 - Special Topics: Performant Programming in Python***	*2020, 2022*
*COP4600 - Operating Systems***	*2018–2020*
COP3503 - Programming Fundamentals 2 in C++	*2019, 2020, 2024*
*CAP4053 - Artificial Intelligence for Computer Games***	*2019, 2024*

***Developed original assignment specifications and materials*

Instructor on record 2020–2021

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

- Adoption and performance of predecessor's lecture materials
- Instruct and oversee students on industry soft-skills including team dynamics and communication of ideas
- Saw to the needs of both traditional student and UF Online student sections
- Coached course assistants in observing students for troubling behavior and mediation technique

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

- Original development of course content and material on key paradigms in programming and efficient design choices
- Instructed students on industry soft-skills including team dynamics and communication of ideas to an interdisciplinary audience
- Executed a smooth transition to online platform at the start of the covid-19 pandemic

Undergraduate Teaching Assistant 2017–2018

Course: COP4600 - Operating Systems 2018

Course: COP3530 - Data Structures and Algorithms 2017

Mentoring & Advising

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

Student Researcher Mentor, SurfLab, UF — 2018—Present

- Advisor to seven undergraduate semester sub-projects for four different students between
- Provided guidance and oversight to two new undergraduates per semester on reading research papers, project organization, presenting research ideas to the group, and developing mature scientific practices.

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

Worked with a small group of learners over the course of the program to stay on track, grow as a cohort, and optimize their meetings with their industry mentors.

2021: Ximena Jaramillo, JaNiece Campbell, Jessica Zhou, Linda Lam
2022: Parag Gupta, Stephanie Lim

Panelist, Prospective Ph.D Student Welcome Visit, CISE Dept., UF — 2020, 2021

Participated as a representative in Ph.D Student, answering questions by applicants about the department and student life and facilitating cross-cohort bonding activities.

Operating Systems Team Lead — 2018—2020

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

- Assisted the professor with course management and student affairs
- Trained the staff on the responsibilities and general approach to being both a TA and mentor
- Provided detailed instruction on how to conduct discussion sections
- Led team of peer mentors and teaching assistants in organization of discussion content
- Taught the staff innovative strategies to better educate others, including utilizing the Socratic Method in Office Hours
- Coached graduate students to serve as mentors to the students under their care from a holistic standpoint in terms of both student major as well as each student's unique perspective

Summer Science Training Program Mentor, UF — 2017, 2019

- Introduced high school students to the environment and experience of working in a university research lab.
- Outlined project milestones and developed a comprehensive timeline for tasks.
- Provided guidance in conducting background research and how to frame accomplishments into an organized presentation.

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

Graduate Teaching Assistantship for Doctoral Program, Dept. of CISE, UF — 2018

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)

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

VascularVR (Research Exhibitor)

Academic Surgical Congress 2020 - Orlando, FL

Jennifer C. Cremer, Jörg Peters

Service to Profession

Student Volunteer for ACM SIGGRAPH — 2023, 2024

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

- Summer Learning Program Organization Team — 2023, 2024
- VFX Careers Webinar Series — 2021
  - University panelist for "VFX Careers: Technical Director"
  - Lead presenter for "University Content: Building from Source with Cmake"

Understudy to Japan Study Abroad Organization — 2019—2022

- Teaching Assistant consultant for CISE/Cross-Cultural Engineering Abroad Kyoto, Japan

Student Consultant to Digital Arts and Science Program — 2018—2019

- Organization and course direction suggestions to present DAS Director (Joshua Fox)

Technical Skills

Programming Languages:

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

Software Packages & Tools:

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

Extracurricular

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

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