

# Jennifer C. Cremer

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## Education

### **University of Florida, Herbert Wertheim College of Engineering**

Ph.D, Computer Graphics & Visualization

Expected 2025

- 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 and Practice of Multimedia Production, Operating Systems, 3D Modeling and Animation, Computer Graphics, 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 FI

Graduate Teaching Assistant 2018 - 2022

*UF at Kyoto University Summer Abroad Program* 2022

*Courses: CIS4930 - Special Topics in CISE - Performant Programming in Python & 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:

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

\*\*Developed original assignment specifications and materials\*\*

Instructor on record 2020 - 2021

*CIS4930: Special Topics in CISE – Performant Programming in Python* Summer 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* Sp' 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

*Course: COP4600 - Operating Systems*

2018

*Course: COP3530 - Data Structures and Algorithms*

2017

## **Mentoring & Advising**

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

### **Student Researcher Mentor, SurfLab, UF**

**2018 - Present**

- Advisor to seven undergraduate semester sub-projects for four different students between 2018-2023
  - Gary Sanson (2018-2019), Thomas Allan (2019), Tianrui Li (2018 – 2021), Connor Lausch (2023 – Present)
- 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.

### **Advisor to Prospective Ph.D Students, CISE Dept., UF**

**2020 - 2021**

- Providing research and planning guidance for 3 undergraduate students for how to prepare application packages for Ph.D. programs
- Connected students with teaching opportunities in the UF department
- Instructed students in graduate responsibilities including how to pick a research lab and getting involved in research, and knowing when graduate school is the right path

### **Operating Systems Team Lead**

**2018 - 2020**

*Dept. of Computer & Information Science & Engineering, Univ. of FI*

- 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.

## **Service to Profession**

<b>Student Volunteer for ACM SIGGRAPH</b>	<b>2023</b>
<b>Academy Software Foundation: Diversity &amp; Inclusion Working Group</b>	<b>2020 - Present</b>
Member, University Partner Contact for Univ. of FL	
Summer Learning Program Organization Team 2023	
VFX Careers Webinar Series	
- University panelist for “VFX Careers: Technical Director”	
- Lead presenter for “University Content: Building from Source with Cmake”	
<b>Understudy to Japan Study Abroad Organization</b>	<b>2019-2022</b>
Teaching Assistant consultant for pilot launch of CISE/Cross-Cultural Engineering Abroad program in Kyoto/Osaka, Japan	
<b>Student Consultant to Digital Arts and Science Program</b>	<b>2018-2019</b>
Organization and course direction suggestions to present DAS Director (Joshua Fox)	

## **Conferences & Papers**

<b>Women in Scientific Computing on Complex Physical and Biological Systems</b>	<b>2022</b>
Gainesville, FL	
<i>“Patient-Specific MRI VR Model Construction and Simulation”, Poster</i>	
<b>ACS Surgeons and Engineers</b>	<b>2021</b>
Virtual	
<i>“From Scans &amp; Model Collections to Interactive Surgical Simulation”, Poster</i>	
<b>Academic Surgical Congress</b>	<b>2020</b>
Orlando, FL	
<i>“VascularVR”, SurfLab Exhibitor</i>	

## **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

## **Technical Skills**

### **Programming Languages:**

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

### **Design/Modeling/Simulation Tools:**

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

### **Intercommunication:**

Conflict Resolution, Project Management, Interdisciplinary Communication, Delegation