

Ellemieke Van Kints

(770)-298-8186 | ellemiekevankints@gmail.com | [LinkedIn](#) | [GitHub](#)

EDUCATION

UNIVERSITY OF GEORGIA - Athens GA

- M.S Artificial Intelligence August 2023
- B.S Computer Science, *Summa Cum Laude* May 2023

PROFESSIONAL EXPERIENCE

NASA Ames Research Center - Mountain View, CA

January 2023 – Present

Distributed Spacecraft Autonomy Intern

- Experimented with Neural Radiance Field (NeRF) algorithms to generate 3D scenes of the lunar surface
- Assessed the viability of NeRF for reconstructing lighting conditions at potential landing sites for the Artemis mission
- Tested the Shadow NeRF and Satellite NeRF algorithms with simulated lunar data generated from Blender

Small Satellite Research Laboratory - Athens, GA

October 2021 – Present

Payload Software Engineer

- Lead a team of 8 people to build and refine a computer vision software for the MOCI cube satellite
- Researched the feature extraction and feature matching subroutines in the Structure from Motion (SfM) pipeline
- Designed and implemented an API which controls all communication between the OBC and TX2i onboard MOCI

CURO Summer Fellowship - Athens, GA

May 2022 – July 2022

Undergraduate Researcher

- Selected as 1 of 30 undergraduate students in my University to perform faculty-mentored research over the summer
- Conducted research on machine learning algorithms to reduce the overall computational complexity of the SfM pipeline
- Parallelized approximate nearest-neighbor search (ANNS) on a K-dimensional tree (KD-Tree) using GPUs to match 32,000 high-dimensional feature points in 4.02 seconds, which is 86% faster than the current method

PROJECTS

Multiview Onboard Computational Imager (MOCI) Cube Satellite, C++/CUDA

October 2021 – Present

- Satellite mission currently underway at the University of Georgia's Small Satellite Research Laboratory
- MOCI will perform passive object detection and 3D terrain reconstruction from Low-Earth Orbit
- Helped improve the computer vision library onboard MOCI

Assessing Damages in the Aftermath of Natural Disasters: A Deep Learning Approach, Python

November 2022

- Built a deep learning model that classifies satellite images based on the severity of structural damage
- Trained and evaluated several CNN architectures using data from 10 large-scale natural disasters events around the world
- Achieved 92% accuracy on test data of Fort Myers captured after Hurricane Ian

Image Steganography, Python

October 2022

- Developed a program which allows users to encode and decode secret messages in images
- Implemented the Least Significant Bit steganography algorithm, which replaces the least significant bits of each pixel value with the bits of the secret message

Satellite Image Downloader, Python

March 2022

- Wrote a script which fires a POST request to the Planet API and downloads satellite images of the University of Georgia
- Worked with JSON and GeoJSON files to filter satellite imagery and corresponding metadata

LEADERSHIP

Girls Who Code - Athens, GA

August 2021 – May 2023

President

- Facilitated after-school computer science programs for young female students across 5 local private and public schools
- Designed curriculums and lesson plans for both 3rd-6th and 7th-8th grade students
- Maintained a successful communication relay with partner schools

Robotics Club - Athens, GA

August 2019 – July 2020

Software Team Member

- Worked on a team to help design, develop, and integrate robot control software
- Competed in the 2020 IEEE Southeast Con Hardware Competition

TECHNICAL SKILLS

Programming: C++, CUDA, Python, Java

Relevant Experience: Computer Vision, Machine Learning, GPU Software Development, TensorFlow, PyTorch, SfM, NeRF, Blender