

# Alex Korte

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## EDUCATION

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### Clemson University

*Bachelor of Science in Computer Science*  
*Minor Degree in Physics*

Clemson, SC

*Expected Graduation: May 2026*  
**GPA: 3.95/4.00**

## SKILLS

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**Languages (Ordered by proficiency):** Python (10 years), C/C++ (3 years), JavaScript (8 years), TypeScript (3 years), HTML/CSS (10 years), Swift (8 years), C# (6 years), Java (6 years)

**Software:** Git, PyTorch, Slurm, React.js, Next.js, Firebase, GCP, AWS, Unity

## EXPERIENCE

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### Arccos

*Clemson Capstone Consultant*

Remote

*Aug 2024 – Dec 2024*

- Developed and deployed an AI-powered golf course mapping system using Segment Anything and Mask2Former, reducing a 35-minute manual process to a single click and minimizing human intervention to only edge cases.
- Built a production-ready system with a React frontend and FastAPI backend, enabling seamless integration of the segmentation model into Arccos' existing workflow through a REST API.
- Led a 5-person team in developing the custom ML pipeline for satellite based golf course feature segmentation, implementing scalable inference scripts, and deploying production models to demand scalable nodes.

### Clemson University

*Research Assistant*

Clemson, SC

*Aug 2022 – Present, Part-time*

- Working on Video Denoising, Volumetric Neural Representations, Computer Vision, & Generative Artificial Intelligence under [Prof. Niyani Li](#).
- Collaborating with a team of graduate students to develop a State-of-the-Art (SOTA) Unsupervised Video Denoising Machine Learning Model for Cellular Microscopy using PyTorch, achieving a 25-fold increase in training speed and a 50% reduction in size compared to existing SOTA methods. [Published at CVPR 2024](#).
- Implemented preexisting SOTA models for quantitative comparisons between competing methods & performed experiments to determine effectiveness of our proposed methods.

### CU-ICAR/VIPR-GS

*Research Assistant*

Clemson, SC

*Aug 2023 – Present, Part-time*

- Collaborating with [CU-ICAR/VIPR-GS](#) researchers on developing autonomous offroading vehicles for DEVCOM, using state-of-the-art models & algorithms.
- Leveraged & modified the GeoTransformer pointcloud registration model to implement a registration algorithm capable of effectively handling off-road environments and sparse feature sets. Offering improvements to a key component of modern SLAM architectures.

## PROJECTS

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### CU-Rocketry Avionics Software Development | [github.com/CURocketEngineering](https://github.com/CURocketEngineering)

- Led a team of 7 students to design and implement flight software for a rocket aiming to achieve an apogee of exactly 10,000 feet for the 2024 [Spaceport America Cup](#) (SAC).
- Directed a subteam of 4 students to develop software for an Active Aerobraking system, dynamically controlling rocket deceleration using standard physics equations and a Kalman filter for optimal accuracy.
- Engineered flight software for the 2023 SAC, enabling high-frequency sensor data collection (128 Hz), real-time telemetry transmission over LoRa Radio, and autonomous staging and parachute deployment.

### Clemson Theta Tau Website | [github.com/ClemsonThetaTau/theta-tau-lg-web](https://github.com/ClemsonThetaTau/theta-tau-lg-web)

- Designed, Developed, and Launched a full stack website for Clemson Theta Tau Professional Engineering Fraternity, enhancing online presence and member engagement.
- Developed a dynamic frontend using Next.js while also supporting static components for improved SEO and a 0.2s load time, an over 5x improvement from the previous website.
- Designed a backend infrastructure with Firebase, integrating a NoSQL database, redundant cloud storage, and serverless functions for improved performance and reliability.