

# Steven E. Kraine

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## Education:

University of Cincinnati, Cincinnati, Ohio

Class of 2024

- Bachelor of Science – Computer Engineering – GPA: 3.91/4.00
- Master of Engineering – Artificial Intelligence – GPA: 4.00/4.00
- University Honors Program

## Experience:

Computer Vision Co-op, Etegent Technologies – Dayton, OH

May 2023 – August 2023

- Developed internal tools to streamline ML development workflows, enhancing efficiency in computer vision model creation and evaluation; optimizing some tasks to 5% of the original cost
- Trained models for object detection using overhead imagery, showcasing proficiency in computer vision tasks.
- Explored innovative data management solutions tailored for diverse and large-scale datasets commonly encountered in computer vision projects.
- Provided critical support to team members by assisting in the setup and management of slurm clusters for scheduled training jobs on remote resources, ensuring seamless model training processes.
- Delivered presentations on transformer models to the entire company and their practical applications in computer vision, demonstrating in-depth knowledge of cutting-edge techniques.
- Applied state-of-the-art techniques like Segment Anything and DINO, gaining hands-on experience with advanced computer vision methods.

Embedded Software Developer, ThorDrive inc. – Cincinnati, Ohio

Jan 2022 – May 2023

- Led effort to evaluate INS sensors for reliability and accuracy by creating software interfaces for multiple sensors
- Implemented changes to localization software that reduced CPU consumption to 33% of original compute resources
- Developed Kalman filtering solution to improve localization reliability and speed
- Integrated ultrasonic sensors into ROS environment for near-field detection
- Investigated new computer system architectures that improved system reliability and safety
- Understood new sensors and integrated them into the current code base utilizing CAN communication
- Utilized open-source tools to build upon data collection pipeline

R+D Computer Vision Co-op, MHS Global – Louisville, Kentucky

August 2020 – August 2021

- Developed a video annotation pipeline to gather valuable statistics on on-site robot performance
- Utilized Artificial intelligence for image annotation with the help of third-party APIs
- Designed and developed C++ application on Nvidia Jetson for object detection
- Performed tests and curated data into concise reports for testing software improvements

## Skills:

- Working Proficiency – C++, Python, GitHub, Microsoft Office, ROS, Ubuntu
- Experienced – Linux shell scripting, Nvidia Jetson, Arduino/Raspberry Pi, PyTorch
- Intermediate – Google Cloud Platform (Data management), CMake, Google Test, Soldering / Breadboarding

## Projects and Research:

Undergraduate Researcher

April 2023 – Present

- Simulated UWB sensors within ROS ecosystem to develop and test estimation and localization algorithms
- Engineered and manufactured sensor mounts for sensor network within the lab setting
- Studied estimation techniques and implemented a kalman filter with least-squares estimation for robot localization within a time-of-flight-based sensor network

Self-Designed Automatic Storage Solution

September 2019 – Present

- Competing with prototype in innovation challenges
- Utilizing skills acquired from classes and extracurriculars to develop a new idea for the self-storage industry

#### **Algorithm Trading Bot 2019 – Present**

- Designed an algorithm to trade live commodities on the Stock Market for a profit

#### **Involvement and Certifications:**

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| • HKN Tau Chapter – President – Cincinnati, OH          | August 2022 – Present  |
| • Team S.P.E.E.D. – Programming Mentor – Temperance, MI | August 2015 – May 2022 |
| • Professional SCRUM Master I                           | August 2023            |