

# Alex Gisi

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## EDUCATION

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**University of Illinois Urbana-Champaign** **2023-Present**  
M.S. in Electrical and Computer Engineering

**University of Kansas** **2019-2023**  
B.S. in Computer Science & B.A. in Mathematics with Honors GPA 3.97/4.0  
Thesis: "Model Predictive Control for Self-Driving Cars"

## SKILLS

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- Python, C++, JavaScript, MATLAB
- Git, Linux shell, Robot Operating System (ROS), Simulink, LaTeX, SolidWorks

## EXPERIENCE

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**Robotics Software Intern**, Southwest Research Institute **May 2023-August 2023**

- Design and implement portrait-drawing robot, including perception and motion planning pipelines
- Write a Python library which uses OpenCV to transform images into drawable representations
- Implement a GUI in RViz for visually programming an industrial robot using drag-and-place format

**Research Assistant**, Technische Universität Graz **June 2022-July 2022**

- Designed and implemented self-driving technology demonstrator with real-time remote capabilities
- Utilized client-server architecture with Python and C++ programming microcontrollers on mini car
- Reviewed state-of-the-art research and reported on implementations of self-driving car technology

**Applied Analytics Group Intern**, SS&C Technologies **June 2021-August 2021**

- Transitioned core AAG product to new cloud environment using PostgreSQL and Python scripting
- Decreased core product's runtime in cloud by 81% with custom PostgreSQL configuration
- Improved team's initial data exploration by creating custom data visualization tool using Python
- Taught cloud and PostgreSQL knowledge to team members in sharing sessions

**Telemetry Team Lead**, KU Solar Car Team **Sept. 2019-May 2022**

- Lead subsystem team for collecting, storing, and visualizing operational data produced by a solar car
- Implemented real-time data visualization dashboard with JavaScript and server backend in Python
- Defined project directions, onboarded new team members, and taught Python and web technologies

**PROJECTS** <https://github.com/AlexGisi>

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**Self-Driving Golf Cart Prototype** **Sept. 2022-May 2023**

- Designed self-driving perception, localization, and planning system by reading literature
- Implemented command generation for robot's path tracking using model predictive control
- Used ROS to communicate between modules of self-driving system
- Voted Niehaus Award winner by peers for outstanding workmanship, innovation (out of 25 teams)

**Freshlink** **Feb. 2021-Sept. 2021**

- Designed, implemented a social network site as Vue.js single-page application with Firebase backend
- Managed hundreds of user's data and implemented user posts, profiles, real-time chat in JavaScript

## PUBLICATION

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**A. Gisi**, E. Higgins, N. Kellerman, R. Pope, and D. Prebyl, 'A Review of Telemetric Subsystems Tracking Relevant Data in a Solar Powered Car', International Telemetering Conference Proceedings. International Foundation for Telemetering, 2021.