

# Khaled Sharif

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Experienced Robotics Software Engineer with a passion for autonomous systems and space exploration. Skilled in computer vision, navigation, and control algorithms. More than 8 years of professional experience.

## Education

Msc in Computer Science from Georgia Institute of Technology (2022)

Bsc in Computer Engineering from University of Jordan (2016)

## Experience

**Robotics Engineer at NASA** [California, USA | 2018 - Present | 6 years]

- [Astrobee](#): a group of free-flying cube-shaped robots currently on-board the International Space Station assisting astronauts and carrying out microgravity experiments autonomously
- [Skylight](#): in collaboration between NASA and CMU, this project successfully proved the viability of a future autonomous lunar rover using power-efficient NVIDIA Jetson devices
- [VIPER](#): a rover that will explore the south pole of the Moon in 2025; my role in the mission is to develop and evaluate computer vision (stereo) algorithms for the rover's 8 cameras

**Software Engineer at ArabiaWeather** [Amman, Jordan | 2016 - 2018 | 2 years]

- Statistical verification and correction of weather observations and forecasts
- Building improved weather forecast simulations in C++ and Python
- Developing full stack software that runs ML inference at production scale
- Researching computational atmospheric modeling and climate analysis

## Publications

[High Performance Computing for Autonomous Planetary Exploration](#)

K Sharif, J Ford, R Whittaker, U Wong; published in IEEE SMC-IT 2021

[Lunar Pit Exploration and Mapping via Autonomous Micro-Rover](#)

J Ford, K Sharif, H Jones, R Whittaker; published in IEEE AeroConf 2021 & 2022

[Building and Evaluating Interpretable Models using Symbolic Regression](#)

K Sharif; published in ICML 2017 AutoML workshop; Aug. 2017 ([Github](#))

[Investigating Algorithmic Stock Market Trading using Ensemble ML Methods](#)

K Sharif, R Saifan, et al; published in Informatica journal; May. 2016 ([Github](#))

## Projects

[NASA ISAAC User Interface](#) (Robot Control Interface; Full Stack JS)

[NASA Astrobee Robot Software](#) (Code running on each Astrobee; C++ & ROS)

## Proficiency

**Robotics**: Expertise using ROS1 & ROS2 on real robots (eg: Astrobee) to implement on-board visual localization and mapping, autonomous navigation, and object manipulation

**AI/ML**: machine learning frameworks such as Pytorch, Tensorflow, Kubeflow, Pachyderm; computer vision libraries such as OpenCV, Kornia; developing & evaluating vision transformers for dense stereo matching and scene reconstruction

**Other**: Expertise in languages including Python, C, C++, JavaScript; DevOps tools such as Docker, Podman, Kubernetes; full stack web development frameworks such as Typescript React (Web & Native) and NextJS (primarily for building robot mission control technology)