Khaled Sharif

www.kldsrf.com | kldsrf@gmail.com | github.com/khaledsharif

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)