Hansol Yoon

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RESEARCH INTERESTS

(Predictive) Runtime Verification; Safe Autonomy; Cyber-Physical Systems.

EDUCATION

University of Colorado Boulder   **Boulder, CO**
Ph.D. in Computer Science, Advisor: Prof. Sriram Sankaranarayanan   *Aug. 2019 - Present*

University of Colorado Boulder   **Boulder, CO**
M.S. in Computer Science   *Aug. 2017 - May. 2019*

Republic of Korea Air Force Academy   **South Korea**
B.S. in Computer Science   *Mar. 2006 - Mar. 2010*

EXPERIENCE

University of Colorado Boulder
Teaching Assistant (Principles of Programming Languages)   *Jan. 2021 - Present*
Research Assistant (Predictive Runtime Verification)   *May. 2019 - Dec. 2020*

Avionics Software Development Center (Air Force)
Software Engineer, Project Manager   *May. 2011 - Jul. 2017*

ACADEMIC PROJECTS

Safety Verification of Autonomous Shuttle
- Predicting future positions of surrounding objects to avoid collisions.
- Anomaly detection from sensor data (camera, LiDAR) to find dangerous situations (offline verification).

Viability Monitoring for Autonomous Vehicles
- Monitoring if autonomous vehicles have viable control strategies to avoid safety violations.

Intent Monitoring of Autonomous Systems
- Robot's intent inference to predict future behavior of the robot.

PUBLICATIONS

- [**ICRA'21**] <u>Hansol Yoon</u>, and Sriram Sankaranarayanan, "Predictive Runtime Monitoring for Mobile Robots using Logic-Based Bayesian Intent Inference" *International Conference on Robotics and Automation (ICRA), 2021.*

- [**IROS'20**] Yi Chou, <u>Hansol Yoon</u>, and Sriram Sankaranarayanan, "Predictive Runtime Monitoring of Vehicle Models Using Bayesian Estimation and Reachability Analysis" *International Conference on Intelligent Robots and Systems (IROS), 2020.*

- [**RV'19**] <u>Hansol Yoon</u>, Yi Chou, Xin Chen, Eric Frew, and Sriram Sankaranarayanan, "Predictive Runtime Monitoring for Linear Stochastic Systems and Applications to Geofence Enforcement for UAVs" *International Conference on Runtime Verification (RV), 2019.*