

Jingyun Ning

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Education

University of Virginia PhD. in Computer Engineering, GPA: 3.8/4.0	Charlottesville, VA Expected Dec. 2024
University of Virginia M.Eng. in Computer Engineering, GPA: 3.5/4.0	Charlottesville, VA Jan.2016-Dec.2017
Shanghai University of Engineering Science B.Eng. in Automation (Automobile Electronic Engineering) GPA 3.5/4.0	Shanghai, China Sep.2011-Jul.2015

Research Experience

Leader of the course project, University of Virginia • Implemented reinforcement learning for autonomous driving. • Established an autonomous driving environment using Airsim. • Applied Deep Q-Networks within Airsim to achieve self-driving behaviors. • Achieved the highest score among all course projects.	Sept. 2017 - Jan. 2018
Capstone research project, University of Virginia • Established an autonomous driving environment using Airsim and Unreal Engine. • Generated hours of driving imagery for dataset collection and preprocessing. • Constructed an end-to-end deep learning architecture utilizing AlexNet.	Mar. 2018 - Aug. 2018
Member of team-dMIST, University of Virginia • Collaborated with two principal investigators on a stormwater management study. • Built two stormwater systems using the SWMM (Storm Water Management Model) simulator. • Designed four different rule-based control strategies. • Implemented a data-driven Model Predictive Control (MPC) for real-time stormwater management.	Oct. 2018 - Aug. 2020
Leader of team-Vehicle Dynamics & Control, Cavalier Autonomous Racing • Studied the vehicle dynamics for various types of vehicles and racecars • Built and refined multiple vehicle models for a full-sized Indy racecar. • Implemented a pure-pursuit control algorithm on the racecar. • Implemented Model Predictive Control (MPC) on a bicycle model for real-time dynamic control of the racecar. • Participated in multiple Indy Autonomous Challenge (IAC) events at racetracks across the United States.	Jun. 2020 - present

Publications and Presentations

- Ning, J., Bowes, B. D., Goodall, J. L., & Behl, M. (2022, June). Data-Driven Model Predictive Control For Real-Time Stormwater Management. In 2022 American Control Conference (ACC) (pp. 1438-1443). IEEE.
- Ning, J., & Behl, M. (2023). Vehicle Dynamics Modeling for Autonomous Racing Using Gaussian Processes. arXiv preprint arXiv:2306.03405.
- Ning, J., & Behl, M. (2023, August). Scalable Deep Kernel Gaussian Process for Vehicle Dynamics in Autonomous Racing. In 7th Annual Conference on Robot Learning.
- Presented at American Control Conference (ACC), Atlanta, US, 2022.
- Presented at Conference on Robot Learning (CoRL), Atlanta, US, 2023.

Teaching Experience

Teaching Assistant, F1Tenth Autonomous Racing, University of Virginia • Prepared ten F1Tenth racecars for student groups, ensuring readiness for practical learning experiences. • Maintained and optimized the F1Tenth racecars throughout the semester, addressing both software and hardware aspects. • Conducted office hours and managed grading responsibilities. • Arranged each assignment demonstration, including the F1Tenth Grand Prix. • Received the Outstanding Graduate Teaching Award.	2021 & 2022
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Skills

Technical Skills: Python, MatLab, ROS & ROS2

Soft Skills: Communication, Leadership, Time Management.