

Assignments for Meeting on Apr. 13, 2021 (1/2)

- ▶ Read the article Falcone, P., Borrelli, F., Asgari, J., Tseng, H. E., & Hrovat, D., "Predictive active steering control for autonomous vehicle systems", IEEE Transactions on Control Systems Technology, 15(3), 566–580, 2008. <https://doi.org/10.1109/TCST.2007.894653>.
- ▶ Read the article Nilsson, J., Falcone, P., Ali, M., & Sjöberg, J., "Receding horizon maneuver generation for automated highway driving", Control Engineering Practice, 41, 124–133, 2015. <https://doi.org/10.1016/j.conengprac.2015.04.006>.
- ▶ Read the article Rosolia, U., & Borrelli, F., "Learning how to autonomously race a car: A predictive control approach", IEEE Transactions on Control Systems Technology, 28(6), 2713–2719, 2019. <https://doi.org/10.1109/TCST.2019.2948135>
- ▶ Read the paper Svensson, L., Bujarbaruah, M., Kapania, N. R., & Törngren, M., "Adaptive Trajectory Planning and optimization at Limits of Handling", In: IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 3942–3948, 2019. <https://doi.org/10.1109/IROS40897.2019.8967679>.

Assignments for Meeting on Apr. 13, 2021 (2/2)

- ▶ Drawing inspiration from the extra assignment (Appendix D) in Hand-in Assignment 3 in TSFS12, implement and evaluate a model predictive controller for a vehicle of your choice (ground vehicle, surface vehicle, or aerial vehicle). The control objective could be path following, trajectory following, or integrated planning and control. Target scenarios to consider could be static obstacles, moving obstacles, or multiple vehicles.
- ▶ **Next meeting: Tuesday April 13, 2021, at 15:15 in Zoom.**
- ▶ Lecture responsibility: Jonas Nordlöf.