A U S H A N G

FREIE UNIVERSITÄT BERLIN

Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Freitag, 20. November 2020, 10:00 Uhr

Ort: WebEx

Disputation über die Doktorarbeit von

Herrn Ricardo Carrillo Mendoza

Thema der Dissertation:

Deep Learning-based Localisation for Autonomous Vehicles

Thema der Disputation:

Multi-Task Learning Using Uncertainty to Weigh Losses for Scene Geometry and Semantics.

Die Arbeit wurde unter der Betreuung von **Prof. Dr. R. Rojas** durchgeführt.

Abstract:
Multi-task learning is the approach to improve the generalization of individual deep learning models by training them in parallel and through a shared representation. Several applications, including autonomous vehicles, which have multiple regression and classification objectives, can benefit from multi-task learning. Nevertheless, the approach performance depends highly on a relative weighting between each task's loss, a tunning manual task that makes multi-task learning not convenient in practice. This talk will present and discuss an approach formulated by Kendall, Alex et al. (2018) to effectively developing multi-task learning by evaluating each objective's homoscedastic uncertainty during training and automatically finding an improved model for the tasks. The model is demonstrated by learning simultaneously per-pixel depth regression, semantic, and instance segmentation from a monocular input image[1].

[1] Kendall, Alex et al. “Multi-task Learning Using Uncertainty to Weigh Losses for Scene Geometry and Semantics.” 2018 IEEE/CVF Conference on Computer Vision and Pattern Recognition (2018): 7482-7491.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Der Vorsitzende der Promotionskommission
Prof. Dr. R. Rojas