J Christian Gerdes

List of Publications by Citations

56 papers	2,207 citations	26 h-index	46 g-index
62 ext. papers	2,842 ext. citations	5 avg, IF	5.64 L-index

#	Paper	IF	Citations
56	Model Predictive Control for Vehicle Stabilization at the Limits of Handling. *IEEE Transactions on Control Systems Technology*, **2013**, 21, 1258-1269	4.8	229
55	Integrating INS Sensors With GPS Measurements for Continuous Estimation of Vehicle Sideslip, Roll, and Tire Cornering Stiffness. *IEEE Transactions on Intelligent Transportation Systems*, **2006**, 7, 483-493	6.1	196
54	Collision Avoidance and Stabilization for Autonomous Vehicles in Emergency Scenarios. *IEEE Transactions on Control Systems Technology*, **2017**, 25, 1204-1216	4.8	176
53	Safe driving envelopes for path tracking in autonomous vehicles. *Control Engineering Practice*, **2017**, 61, 307-316	3.9	152
52	Autonomous vehicle control at the limits of handling. *International Journal of Vehicle Autonomous Systems*, **2012**, 10, 271	0.4	112
51	Design of a feedback-feedforward steering controller for accurate path tracking and stability at the limits of handling. *Vehicle System Dynamics*, **2015**, 53, 1687-1704	2.8	111
50	Estimation of Tire Slip Angle and Friction Limits Using Steering Torque. *IEEE Transactions on Control Systems Technology*, **2010**, 18, 896-907	4.8	105
49	Using the centre of percussion to design a steering controller for an autonomous race car. *Vehicle System Dynamics*, **2012**, 50, 33-51	2.8	70
48	Designing Steering Feel for Steer-by-Wire Vehicles Using Objective Measures. *IEEE/ASME Transactions on Mechatronics*, **2015**, 20, 373-383	5.5	66
47	Up to the limits: Autonomous Audi TTS **2012**,		60
46	Dynamic Modeling of Residual-Affected Homogeneous Charge Compression Ignition Engines with Variable Valve Actuation. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2005**, 127, 374-381	1.6	59
45	Motor learning affects car-to-driver handover in automated vehicles. *Science Robotics*, **2016**, 1,	18.6	57
44	Neural network vehicle models for high-performance automated driving. *Science Robotics*, **2019**, 4,	18.6	55
43	Model-Based Control of HCCI Engines Using Exhaust Recompression. *IEEE Transactions on Control Systems Technology*, **2010**, 18, 1289-1302	4.8	51
42	Handwheel Force Feedback for Lanekeeping Assistance: Combined Dynamics and Stability. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2006**, 128, 532-542	1.6	45
41	Analysis and control of high sideslip manoeuvres. *Vehicle System Dynamics*, **2010**, 48, 317-336	2.8	44
40	Staying within the nullcline boundary for vehicle envelope control using a sliding surface. *Vehicle System Dynamics*, **2013**, 51, 199-217	2.8	43

39	A Sequential Two-Step Algorithm for Fast Generation of Vehicle Racing Trajectories. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2016**, 138,	1.6	39
38	Design of Variable Vehicle Handling Characteristics Using Four-Wheel Steer-by-Wire. *IEEE Transactions on Control Systems Technology*, **2016**, 24, 1529-1540	4.8	38
37	Incorporating Ethical Considerations Into Automated Vehicle Control. *IEEE Transactions on Intelligent Transportation Systems*, **2017**, 18, 1429-1439	6.1	37
36	Physics-Based Modeling and Control of Residual-Affected HCCI Engines. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2009**, 131,	1.6	35
35	Vehicle control synthesis using phase portraits of planar dynamics. *Vehicle System Dynamics*, **2019**, 57, 1318-1337	2.8	31
34	A Controller Framework for Autonomous Drifting: Design, Stability, and Experimental Validation. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2014**, 136,	1.6	28
33	From the Racetrack to the Road: Real-Time Trajectory Replanning for Autonomous Driving. *IEEE Transactions on Intelligent Vehicles*, **2019**, 4, 309-320	5	27
32	Path-tracking for autonomous vehicles at the limit of friction **2017**,		27
31	Implementation and Analysis of a Repetitive Controller for an Electro-Hydraulic Engine Valve System. *IEEE Transactions on Control Systems Technology*, **2011**, 19, 1102-1113	4.8	26
30	Predictive Haptic Feedback for Obstacle Avoidance Based on Model Predictive Control. *IEEE Transactions on Automation Science and Engineering*, **2016**, 13, 26-31	4.9	24
29	Neural, physiological, and behavioral correlates of visuomotor cognitive load. *Scientific Reports*, **2017**, 7, 8866	4.9	24
28	Path tracking of highly dynamic autonomous vehicle trajectories via iterative learning control **2015**,		22
27	A New Yaw Dynamic Model for Improved High Speed Control of a Farm Tractor. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2002**, 124, 659-667	1.6	22
26	Simultaneous stabilization and tracking of basic automobile drifting trajectories **2016**,		18
25	Modeling and Control of an Exhaust Recompression HCCI Engine Using Split Injection. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2012**, 134,	1.6	16
24	Toward Automated Vehicle Control Beyond the Stability Limits: Drifting Along a General Path. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2020**, 142,	1.6	16
23	Coordinating Tire Forces to Avoid Obstacles Using Nonlinear Model Predictive Control. *IEEE Transactions on Intelligent Vehicles*, **2020**, 5, 21-31	5	15
22	Cooperative Collision Avoidance via proximal message passing **2015**,		14

21	Autonomous vehicle control for emergency maneuvers: The effect of topography **2015**,		13
20	Mind over motor mapping: Driver response to changing vehicle dynamics. *Human Brain Mapping*, **2018**, 39, 3915-3927	5.9	13
19	Insights into vehicle trajectories at the handling limits: analysing open data from race car drivers. *Vehicle System Dynamics*, **2017**, 55, 191-207	2.8	12
18	Control of exhaust recompression HCCI using hybrid model predictive control **2011**,		11
17	. *IEEE Transactions on Robotics*, **2021**, 37, 1313-1325	6.5	10
16	Learning at the Racetrack: Data-Driven Methods to Improve Racing Performance Over Multiple Laps. *IEEE Transactions on Vehicular Technology*, **2020**, 69, 8232-8242	6.8	6
15	Modeling and control of exhaust recompression HCCI using split injection **2010**,		6
14	A Hybrid Control Design for Autonomous Vehicles at Uncontrolled Crosswalks **2019**,		5
13	A synthetic input approach to slip angle based steering control for autonomous vehicles **2017**,		5
12	An analytical method for reducing combustion instability in homogeneous charge compression ignition engines through cycle-to-cycle control. *International Journal of Engine Research*, **2015**, 16, 485-500	2.7	5
11	Neural Network Model Predictive Motion Control Applied to Automated Driving With Unknown Friction. *IEEE Transactions on Control Systems Technology*, **2021**, 1-12	4.8	5
10	Predictive control of vehicle roll dynamics with rear wheel steering **2010**,		4
9	Nonlinear Optimization of a Racing Line for an Autonomous Racecar Using Professional Driving Techniques **2012**,		4
8	Impacts of Model Fidelity on Trajectory Optimization for Autonomous Vehicles in Extreme Maneuvers. *IEEE Transactions on Intelligent Vehicles*, **2021**, 6, 546-558	5	4
7	Toward Closing the Loop on Human Values. *IEEE Transactions on Intelligent Vehicles*, **2019**, 4, 437-446	5	2
6	Prescriptive and proscriptive moral regulation for autonomous vehicles in approach and avoidance **2016**,		2
5	Creating predictive haptic feedback for obstacle avoidance using a model predictive control (MPC) framework **2015**,		2
4	Analysis of Feasible Tire Force Regions for Optimal Tire Force Allocation with Limited Actuation. *IEEE Intelligent Transportation Systems Magazine*, **2017**, 9, 75-87	2.6	2

3	Long-Horizon Vehicle Motion Planning and Control Through Serially Cascaded Model Complexity. *IEEE Transactions on Control Systems Technology*, **2021**, 1-14	4.8	2
2	Robust Stabilization and Collision Avoidance through Minimizing Open-Loop Velocity Uncertainty **2020**,		1
1	High Speed Emulation in a Vehicle-in-the-Loop Driving Simulator. *IEEE Transactions on Intelligent Vehicles*, **2022**, 1-1	5	1