Ramón Tamino Uhl

Curriculum vitae

CONTACT

Street. No. 8
xxxxx, Stuttgart

+49 xxx xxxxxxxx

xxxxxxxxxx@xxxxx.com

LinkedIn

uhl-CtrlWorks

PERSONAL INFORMATION

xx.xx.xxxx

German

TECHNICAL SKILLS

Cybernetics Engineering

System Dynamics · Control Theory · Autonomous Systems · Simulation · AI · Optimal Control · Nonlinear Control · Model Predictive Control · Adaptive Control · Deep Learning · System and Parameter Identification · Dynamics and Control of Legged Locomotion · Reinforcement Learning

Automotive

Vehicle Dynamics Modeling · Drivetrain Control · Vehicle State Estimation · Processor-in-the-Loop Testing · Objective Evaluation of Driving Dynamics · ISO 26262 / Functional Safety

Technology Management

Product Development & Design · Requirements Analysis & FMEA · Interdisciplinary Project Work · Innovation Management · CAD · Standards & Patent Research · Project Planning · Team Coordination · Economic Evaluation of Technical Solutions

SOFTWARE & CODE

MATLAB · Simulink · NXP MBDT · Infineon HSP · Python · Java · HTML · CSS · Basic256 · Google Colab · GIT · Microsoft Office · LaTeX · Siemens NX

LANGUAGES

German ●●●●●
Spanish ●●●●●
English ●●●●○
French ●●○○○

PROFILE

I combine Cybernetics Engineering with Vehicle Development – bringing strong system-level understanding and experience in developing high-performance and innovative vehicle functions. My focus lies in advanced control methods, AI-based approaches, and the dynamics and control of legged locomotion.

PROFESSIONAL EXPERIENCE

Dr. Ing. h.c. F. Porsche AG Part-time • Weissach

- **Working Student – Overall Vehicle Architecture** Dec. 2024 – Present
  - Contribution to the development of a test and validation strategy for vehicle software
  - Support of the advancement of safety-critical functions (ASIL-D)
  - Focus on automation, performance assessment, and functional safety
  - Analysis of execution time and resource usage using PIL tests on target hardware
  - Contribution to the implementation of a new E/E architecture
- **Master´s Thesis – Drivetrain Control and Software** Apr. 2024 – Nov. 2024
  - **Topic:** *"Optimization of Performance and Comfort: Drivetrain Modeling and Parameter Identification for Driveline Oscillation and Traction Control within a Vehicle Dynamics Control Framework"* (Grade: 1.0)
  - Development of an adaptive Model Predictive Controller (MPC) for torque control under varying friction conditions
  - Combination of physics-based and data-driven parameter identification
  - Evaluation of comfort and performance using derived objective metrics
  - Validation of control quality and real-time capability via PIL tests on target hardware
- **Working Student – Chassis Dynamics** Jan. 2023 – Dec. 2023
  - Contribution to the virtual evaluation of driving dynamics and comfort in the overall vehicle development process
  - Support of simulation, tool development, and data-driven analysis
  - Development of automation routines and analysis tools for evaluating measurement and simulation data
  - Contribution to the objectification of vehicle dynamics evaluation criteria

EDUCATION

University of Stuttgart Full-time • Stuttgart

- **Master (M. Sc.) – Cybernetics Engineering** Oct. 2021 – Present
  - Development of analytical and numerical methods for modeling, system identification, analysis, and control of complex dynamic systems
  - Training in the integration of mathematics, engineering, and computer science to describe and optimize technical processes
  - Application of simulation techniques and systems theory for the design of intelligent and autonomous control systems
  - Specialization in autonomous systems and nonlinear mechanics
  - **Project:** *"Model-Based Control of a 3-DoF Helicopter for Real-Time Trajectory Tracking"*
  - **Project competition:** *"Vehicle Dynamics Control and Trajectory Optimization for a Single-Track Vehicle Model"* – awarded for the best control solution
- **Bachelor (B. Sc.) – Technology Management** Oct. 2017 – Oct. 2021
  - Focus on interdisciplinary project work and the design of technological innovation processes at the interface of engineering and management
  - Broad engineering fundamentals complemented by coursework in economics and specialization in simulation, automation and control engineering
  - **Bachelor's Thesis:** *"Systematic Controller Design for a LEGO Mindstorms Ballbot"* (Grade: 1.7)

PUBLICATIONS

- **FKFS Symposium 2025** Author • Stuttgart • Jul. 2025

  Uhl, R. *"Development and Evaluation of a Combined Driveline Oscillation and Traction Controller Using Model Predictive Control and Reinforcement Learning: A Comparative Case Study",* accepted for publication in the SAE Technical Paper Series, Paper-Nr. 2025-01-0291 to be presented at the FKFS Symposium on Automotive and Engine Technology 2025, Stuttgart July 2025. (Peer-reviewed)