

# Dr. Philippe Komma



## Background

- 10/1999 - 06/2006: Studies of Computer Science (Bioinformatics) at the University of Tübingen
- 07/2005 - 12/2005: Diploma thesis at the Telecommunications Software and Multimedia Laboratory, Helsinki University of Technology
- Since 10/2006: Research assistant at the Department of Computer Architecture, University of Tübingen

## Research Interests

- Bayesian Techniques for Terrain Classification
- Simplification of Support Vector Machines

## Current Projects

- Vibration-based Terrain Classification

## Publications

- [1] Sebastian A. Scherer, Daniel Dube, Philippe Komma, Andreas Masselli, and Andreas Zell. Robust Real-Time Number Sign Detection on a Mobile Outdoor Robot. In *Proceedings of the 6th European Conference on Mobile Robots (ECMR 2011)*, Örebro, Sweden, September 2011.
- [2] Yasir Niaz Khan, Philippe Komma, Karsten Bohlmann, and Andreas Zell. Grid-based visual terrain classification for outdoor robots using local features. In *IEEE Symposium on Computational Intelligence in Vehicles and Transportation Systems (CIVTS 2011)*, pages 16 -- 22, Paris, France, apr 2011. [ [DOI](#) ]
- [3] Yasir Niaz Khan, Philippe Komma, and Andreas Zell. High resolution visual terrain classification for outdoor robots. In *Computer Vision Workshops (ICCV Workshops), 2011 IEEE International Conference on*, pages 1014 --1021, Barcelona, Spain, nov 2011. [ [DOI](#) ]
- [4] Philippe Komma and Andreas Zell. Markov random field-based clustering of vibration data. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2010)*, pages 1902--1908, Taipei, Taiwan, October 2010. Best Paper Award Nominee.
- [5] Philippe Komma and Andreas Zell. Clustering vibration data using a temporally coherent Expectation Maximization approach. In *7th Symposium on Intelligent Autonomous Vehicles (IAV 2010)*, pages 1--6, Lecce, Italy, September 2010.
- [6] Philippe Komma and Andreas Zell. Posterior probability estimation techniques embedded in a bayes filter for vibration-based terrain classification. *Springer Tracts in Advanced Robotics*, 62:79--89, 2010.
- [7] Philippe Komma and Andreas Zell. Posterior probability estimation techniques embedded in a Bayes filter for vibration-based terrain classification. In *7th International Conference on Field and Service Robots (FSR 2009)*, pages 1--10, MIT, Cambridge, Massachusetts, USA, July 2009.
- [8] Philippe Komma, Christian Weiss, and Andreas Zell. Adaptive Bayesian filtering for vibration-based terrain classification. In *IEEE/RSJ International Conference on Robotics and Automation (ICRA 2009)*, pages 3307--3313, Kobe, Japan, May 2009.

- [9] Philippe Komma and Andreas Zell. Towards real-time and memory efficient predictions of valve states in diesel engines. In *IEEE Workshop on Computational Intelligence in Vehicles and Vehicular Systems (CIVVS 2009)*, pages 8--15, Nashville, TN, USA, April 2009.
- [10] Philippe Komma, Christian Weiss, and Andreas Zell. Improved vibration based terrain classification using temporal coherence. In *40th International Symposium on Robotics (ISR)*, pages 359--364, Barcelona, Spain, March 2009.
- [11] John Shutty, Wolfgang Wenzel, and Philippe Komma. Control strategy optimization for hybrid EGR engines. In *9. Internationales Stuttgarter Symposium 2009 - Automobil- und Motorentchnik*, Stuttgart, Germany, March 2009.
- [12] Philippe Komma, Jan Fischer, Frank Duffner, and Dirk Bartz. Lossless volume data compression schemes. In *Simulation and Visualization 2007 (SimVis 2007)*, pages 169--182, Magdeburg, Germany, March 2007.

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