

## Web of Science™

1 record(s) printed from Clarivate Web of Science

---

### Record 1 of 1

**Title:** Evaluation of the Use of an Intelligent System in the Calibration of a Refined Car-Following Model

**Author(s):** Pop, MD (Pop, Madalin-Dorin); Prostean, O (Prostean, Octavian); Micea, MV (Micea, Mihai V.)

**Book Group Author(s):** IEEE

**Source:** 2022 IEEE 22ND INTERNATIONAL SYMPOSIUM ON COMPUTATIONAL INTELLIGENCE AND INFORMATICS AND 8TH IEEE INTERNATIONAL CONFERENCE ON RECENT ACHIEVEMENTS IN MECHATRONICS, AUTOMATION, COMPUTER SCIENCE AND ROBOTICS (CINTI-MACRO) **Book Series:** International Symposium on Computational Intelligence and Informatics **Pages:** 107-112 **DOI:** 10.1109/CINTI-MACRo57952.2022.10029500 **Published:** 2022

**Times Cited in Web of Science Core Collection:** 0

**Total Times Cited:** 0

**Usage Count (Last 180 days):** 3

**Usage Count (Since 2013):** 3

**Cited Reference Count:** 20

**Abstract:** This paper aims to extract the computational logic of a hybrid method for online calibration of car-following models and apply it to a refined car-following model that incorporates the behavior of vehicles moving on the adjacent traffic lanes. This calibration method combines the concept of Kalman filters with the Takagi-Sugeno Fuzzy Inference System (T-S FIS). Furthermore, this paper analyzes the influence of the lane change behavior on the calibration process. The testing of the hybrid calibration method in the case of a refined car-following model uses real traffic data and it is followed by a discussion of the results based on day/night traffic behaviors.

**Accession Number:** WOS:000972597100015

**Language:** English

**Document Type:** Proceedings Paper

**Conference Title:** IEEE Joint 22nd International Symposium on Computational Intelligence and Informatics / 8th IEEE International Conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics (CINTI-MACRo)

**Conference Date:** NOV 21-22, 2022

**Conference Location:** Budapest, HUNGARY

**Conference Sponsors:** IEEE, Hungarian Fuzzy Assoc

**Author Keywords:** computational intelligent system; fuzzy inference; refined car-following model; Takagi-Sugeno; Kalman filter; online calibration; lane change behavior

**Addresses:** [Pop, Madalin-Dorin; Micea, Mihai V.] Politehn Univ Timioara, Comp & Informat Technol Dept, Timisoara, Romania.

[Prostean, Octavian] Politehn Univ Timioara, Automat & Appl Informat Dept, Timisoara, Romania.

**Corresponding Address:** Pop, MD (corresponding author), Politehn Univ Timioara, Comp & Informat Technol Dept, Timisoara, Romania.

**E-mail Addresses:** madalin.pop@upt.ro; octavian.prostean@upt.ro; mihai.micea@cs.upt.ro

**Affiliations:** Polytechnic University of Timisoara; Polytechnic University of Timisoara

**Author Identifiers:**

Author	Web of Science ResearcherID	ORCID Number
Pop, Mădălin-Dorin	AAD-8328-2020	0000-0002-2524-3370

**Publisher:** IEEE

**Publisher Address:** 345 E 47TH ST, NEW YORK, NY 10017 USA

**Web of Science Index:** Conference Proceedings Citation Index - Science (CPCI-S)

**Web of Science Categories:** Computer Science, Artificial Intelligence; Robotics

**Research Areas:** Computer Science; Robotics

**IDS Number:** BV0KC

**ISSN:** 2380-8586

**eISSN:** 2471-9269

**ISBN:** 979-8-3503-9882-3

**29-char Source Abbrev.:** INT SYMP COMP INTELL

**Source Item Page Count:** 6

**Funding:**

Funding Agency	Grant Number
European Social Fund	POCU/993/6/13/153437

This paper was financially supported by the Project "Network of excellence in applied research and innovation for doctoral and postdoctoral programs"/InoHubDoc, project co-funded by the European Social Fund financing agreement no. POCU/993/6/13/153437.

The data used for simulations were received from "Primaria Municipiului Timisoara -Directia Generala Drumuri, Poduri, Parcaje si Retele Utilitare-Birou Monitorizare Trafic", Timisoara, Romania, based on the approved request RE2019-002611/18.12.2019. The support is gratefully acknowledged.

**Output Date:** 2023-10-31

---

End of File