

(54) Title of the invention : IoT DRIVEN DESIGN SYSTEM OF BEHAVIOR OF AUTONOMOUS VEHICLE STATE ESTIMATION ON PREDICTED BEHAVIOR OF OTHER VEHICLES USING MACHINE LEARNING

(51) International classification :B60W0040120000, B60R0016023000, H04L0012400000, G09B0019160000, G08G0001096200

(86) International Application No Filing Date :PCT// / :01/01/1900

(87) International Publication No : NA

(61) Patent of Addition to Application Number Filing Date :NA :NA

(62) Divisional to Application Number Filing Date :NA :NA

(71)Name of Applicant :

1)Dr. L. Ramesh, TIPS College of Arts and Science
Address of Applicant :Assistant Professor & Head, Department of Computer Science, TIPS College of Arts and Science, Coimbatore-641107, Tamil Nadu, India Coimbatore -----

2)Mr.K.Karthikeyan, SNS College of Engineering

3)Mr.Saravana Prabhu Subramaniam, KLA India Software Private Limited

4)Ms.Kalaipriya P, Dr SNS College of Education

5)Dr. S. Anu H Nair, Annamalai University

6)Dr. K. P. Sanal Kumar, R. V. Government Arts College

7)Dr.Jebakumar Immanuel D, SNS College of Engineering

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)Dr. L. Ramesh, TIPS College of Arts and Science
Address of Applicant :Assistant Professor & Head, Department of Computer Science, TIPS College of Arts and Science, Coimbatore-641107, Tamil Nadu, India Coimbatore -----

2)Mr.K.Karthikeyan, SNS College of Engineering
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, SNS College of Engineering, Coimbatore – 641107, Tamil Nadu, India Coimbatore -----

3)Mr.Saravana Prabhu Subramaniam, KLA India Software Private Limited
Address of Applicant :SQC Specialist, KLA India Software Private Limited, Perungudi, Chennai -600096, Tamil Nadu, India. Coimbatore -----

4)Ms.Kalaipriya P, Dr SNS College of Education
Address of Applicant :Student, Dr SNS College of Education, Coimbatore-641049, Tamil Nadu, India Coimbatore -----

5)Dr. S. Anu H Nair, Annamalai University
Address of Applicant :Assistant professor Department of computer science and Engineering Annamalai university Chidambaram – 6008002, Tamil Nadu, India Chidambaram -----

6)Dr. K. P. Sanal Kumar, R. V. Government Arts College
Address of Applicant :Assistant professor, Department of Computer Science, R. V. Government Arts College, Chengalpattu- 603001, Tamil Nadu, India Chengalpattu -----

7)Dr.Jebakumar Immanuel D, SNS College of Engineering
Address of Applicant :Associate Professor, Department of Computer Science and Engineering, SNS College of Engineering, Coimbatore – 641107, Tamil Nadu, India Coimbatore -----

(57) Abstract :

We present a method for extracting proprietary in-vehicle data automatically using sensor data correlated with the required information, which requires electronic control unit identification analysis and data interpretation. First, the proposed system employs threshold, random forest, and long short-term memory-based algorithms to determine the vehicle's driving condition using inertial measurement unit and global positioning system readings. The development of automobiles fitted with sensors to get standardized information such as engine speed and vehicle speed from the in-vehicle controller area network (CAN) system has come from advancements in vehicle technology. However, obtaining proprietary information from CAN frames, such as brake pedal and steering wheel function, which is critical for driver behavior research, can be difficult. The system then splits in-vehicle CAN frames using the estimation and scores each segment using our scoring technique to choose eligible candidates by comparing each candidate to its estimation using the suggested distance matching algorithm. The vehicle control is overseen by a nonlinear model-predictive control (NMPC) system, which is coupled to the estimating scheme. We put the proposed system to the test in a real-world situation with real cars in a city. The accuracy of the driving condition prediction is demonstrated in the performance evaluation, meaning that the approaches presented are suitable for the autonomous extraction of proprietary in-vehicle data.

No. of Pages : 12 No. of Claims : 5