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(71)Name of Applicant :

1)Dr. Chandra Sekhar Akula

Address of Applicant :Director & Professor, Avanthi Institute of Engineering and Technology, Beside Tagarapuvalasa Bridge, Cherukupally Village, Bhogapuram Mandal, Vizianagaram, Pin-531162
Vizianagaram -----

2)Dr. Sumit Kumar Mishra

3)Dr.Shankar Nayak Bhukya

4)Ruchi Agrawal

5)J.A.Jevin

6)R. Nithin Kumar

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)Dr. Chandra Sekhar Akula

Address of Applicant :Director & Professor, Avanthi Institute of Engineering and Technology, Beside Tagarapuvalasa Bridge, Cherukupally Village, Bhogapuram Mandal, Vizianagaram, Pin-531162
Vizianagaram -----

2)Dr. Sumit Kumar Mishra

Address of Applicant :Assistant Professor, Department of Computer Science and Science, Chandigarh University, Maholi Maholi -----

3)Dr.Shankar Nayak Bhukya

Address of Applicant :Professor, Department of Computer Science & Engineering (Data Science), CMR Technical Campus, Hyderabad, Telangana, India, 501401 Hyderabad -----

4)Ruchi Agrawal

Address of Applicant :Assistant Professor, Department of Computer Science & Engineering, Government Engineering College, Sejbahar, Raipur (C.G.), Pin- 492004 Raipur -----

5)J.A.Jevin

Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Velammal Institute of Technology, Panchetti Post, Tiruvallur, Pincode - 601204 Tiruvallur -----

6)R. Nithin Kumar

Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Velammal Institute of Technology, Panchetti Post, Tiruvallur, Pincode - 601204 Tiruvallur -----

(57) Abstract :

ABSTRACT DEEP LEARNING RESOLVES REPRESENTATIVE MOVEMENT PATTERNS IN A MARINE The analysis of animal movement from telemetry data provides insights into how and why animals move. While traditional approaches to such analysis mostly focus on predicting animal states during movement, we describe an approach that allows us to identify representative movement patterns of different animal groups. To do this, we propose a carefully designed recurrent neural network and combine it with telemetry data for automatic feature extraction and identification of non-predefined representative patterns. In the experiment, we consider a particular marine predator species, the southern elephant seal, as an example. With our approach, we identify that the male seals in our data set share similar movement patterns when they are close to land. We identify this pattern recurring in a number of distant locations, consistent with alternative approaches from the previous invention.

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