



Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures

By Lounis Adouane

Download now

Read Online ➔

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane

Improve the Safety, Flexibility, and Reliability of Autonomous Navigation in Complex Environments

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures explores the use of multi-controller architectures in fully autonomous robot navigation—even in highly dynamic and cluttered environments. Accessible to researchers and graduate students involved in mobile robotics and fully autonomous vehicle navigation, the book presents novel techniques and concepts that address different complex mobile robot tasks.

The author examines the development of reliable elementary controllers and proposes mechanisms to manage the interaction of these multi-controller architectures while addressing different constraints and enhancing metrics/criteria linked to the safety, flexibility, and reliability of the proposed control architectures. He covers the modeling of subtasks, reliable obstacle avoidance, appropriate stable control laws for target reaching/tracking, short- and long-term trajectory/waypoint planning, navigation through sequential waypoints, and the cooperative control and interaction of a group of mobile robots. The author's website provides MATLAB® and Simulink® source code of the main procedures related to the task modeling, planning, and control of mobile robots. It also includes videos showing the main simulations and experiments given in the text.

In addition to flexible and bottom-up construction, multi-controller architectures can be formally analyzed to achieve reliable navigation in complex environments. This book reveals innovative control architectures that can lead to fully autonomous vehicle navigation in these challenging situations.

 [Download Autonomous Vehicle Navigation: From Behavioral to ...pdf](#)

 [Read Online Autonomous Vehicle Navigation: From Behavioral t ...pdf](#)

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures

By Lounis Adouane

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane

Improve the Safety, Flexibility, and Reliability of Autonomous Navigation in Complex Environments

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures explores the use of multi-controller architectures in fully autonomous robot navigation—even in highly dynamic and cluttered environments. Accessible to researchers and graduate students involved in mobile robotics and fully autonomous vehicle navigation, the book presents novel techniques and concepts that address different complex mobile robot tasks.

The author examines the development of reliable elementary controllers and proposes mechanisms to manage the interaction of these multi-controller architectures while addressing different constraints and enhancing metrics/criteria linked to the safety, flexibility, and reliability of the proposed control architectures. He covers the modeling of subtasks, reliable obstacle avoidance, appropriate stable control laws for target reaching/tracking, short- and long-term trajectory/waypoint planning, navigation through sequential waypoints, and the cooperative control and interaction of a group of mobile robots. The author's website provides MATLAB® and Simulink® source code of the main procedures related to the task modeling, planning, and control of mobile robots. It also includes videos showing the main simulations and experiments given in the text.

In addition to flexible and bottom-up construction, multi-controller architectures can be formally analyzed to achieve reliable navigation in complex environments. This book reveals innovative control architectures that can lead to fully autonomous vehicle navigation in these challenging situations.

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane
Bibliography

- Sales Rank: #2387372 in eBooks

- Published on: 2016-04-21
- Released on: 2016-04-21
- Format: Kindle eBook

 **Download** [Autonomous Vehicle Navigation: From Behavioral to ...pdf](#)

 **Read Online** [Autonomous Vehicle Navigation: From Behavioral t ...pdf](#)

Download and Read Free Online Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane

Editorial Review

About the Author

Lounis Adouane is an associate professor at the Institut Pascal - Polytech Clermont-Ferrand in France. He received an MS in 2001 from IRCCyN-ECN Nantes, where he worked on the control of legged mobile robotics. In 2005, he obtained a PhD in automatic control from FEMTO-ST laboratory-UFC Besançon. During his PhD studies, he deeply investigated the field of multi-robot systems, especially those related to bottom-up and hybrid control architectures. Dr. Adouane's current research topics are related to both autonomous navigation of mobile robots in complex environments and cooperative control architectures for multi-robot systems. More specifically, his main research include planning and control, hybrid multi-controller architectures, obstacle avoidance, cooperative robotics, artificial intelligence (such as Markov decision process, multi-agent systems, and fuzzy logic), and multi-robot/agent simulation. He is the author/coauthor of more than 60 refereed international papers on these topics.

Users Review

From reader reviews:

Leta Welter:

This book untitled Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures to be one of several books that best seller in this year, that's because when you read this publication you can get a lot of benefit onto it. You will easily to buy this kind of book in the book retail outlet or you can order it through online. The publisher in this book sells the e-book too. It makes you easier to read this book, because you can read this book in your Smart phone. So there is no reason to you personally to past this book from your list.

Manuel Rodriguez:

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures can be one of your beginner books that are good idea. We recommend that straight away because this book has good vocabulary that will increase your knowledge in language, easy to understand, bit entertaining but still delivering the information. The writer giving his/her effort to set every word into enjoyment arrangement in writing Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures however doesn't forget the main position, giving the reader the hottest as well as based confirm resource facts that maybe you can be certainly one of it. This great information can easily drawn you into brand new stage of crucial pondering.

Charles Massie:

The book untitled Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller

Architectures contain a lot of information on the item. The writer explains your girlfriend idea with easy way. The language is very straightforward all the people, so do definitely not worry, you can easy to read it. The book was published by famous author. The author provides you in the new period of time of literary works. You can easily read this book because you can continue reading your smart phone, or device, so you can read the book inside anywhere and anytime. In a situation you wish to purchase the e-book, you can available their official web-site along with order it. Have a nice go through.

Christopher Palmer:

In this era globalization it is important to someone to get information. The information will make someone to understand the condition of the world. The fitness of the world makes the information better to share. You can find a lot of personal references to get information example: internet, magazine, book, and soon. You will see that now, a lot of publisher which print many kinds of book. The actual book that recommended to you is Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures this e-book consist a lot of the information on the condition of this world now. This specific book was represented how does the world has grown up. The terminology styles that writer value to explain it is easy to understand. Typically the writer made some investigation when he makes this book. That's why this book acceptable all of you.

Download and Read Online Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane #ZO3NYSV7THD

Read Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane for online ebook

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane books to read online.

Online Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane ebook PDF download

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane Doc

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane Mobipocket

Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane EPub

ZO3NYSV7THD: Autonomous Vehicle Navigation: From Behavioral to Hybrid Multi-Controller Architectures By Lounis Adouane