Philippe Martinet
Ecole Centrale de Nantes | EC Nantes · Department of Automatics and Robotics
32.45 · PhD

About

319
Research items
17,110
Reads
3,322
Citations

Introduction

Skills and Expertise

Design Engineering | Control Theory | Computer Vision | Robotics | Automobile Engineering | Automotive Industry | Kinematics | Mobile Robotics | Controller Design | Automotive | Machines | Robot Control | Adaptive Control | Robust Control

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Research Experience

Nov 2017 - Oct 2022

INRIA Sophia Antipolis

France

Position

Research Director

Sep 2011 - Oct 2017

French National Centre for Scientific Research

irccyn · Nantes, Pays de la Loire, France

Position

Head of Mobile Robots Research Axis

Description

Researcher at IRCCyN (Vision Based control of robots (Parallel, multi arms, Humanoid, UAV), Platooning, Vision/Force Coupling)

Sep 2011

Ecole Centrale de Nantes

Department of Automatics and Robotics · Nantes, France

Description
Vision Based Control of Robots (Parallel, Multi Arms System, Humanoid), Platooning, Vision/Force coupling; Head of Mobile robotics axis

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Current institution
Ecole Centrale de Nantes | EC Nantes
Department of Automatics and Robotics · Nantes, France

Current position
Research Director at INRIA (next 5 years)

Nicolas Bouton's Lab
Lab head
Nicolas Bouton

Lab members (5)

Top co-authors View All

Benoit Thuilot
Université Clermont Auvergne

Nicolas Andreff
Institut FEMTO-ST

Y. Mezouar

Roland Lenain
National Research Institute of Science and Technology for Environment and Agriculture

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Co-authors View All

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Followers View All


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Rabeh Abbassi


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Ecole Centrale de Nantes

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Philippe Bonnifait
Université de Technologie de Compiègne


Mario Prats
Google Inc.


S. Glaser
Institut Français des Sciences et Technologies des Transports, de l'Aménagement et des Réseaux


François Pierrot
Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier (LIRMM)

Projects

Projects (5)

Design and control of a flying parallel robot

Project

Drone co-manipulation is already an explored field, especially in load transportation. Those co-manipulations are generally performed with cables, resulting in a sort of flying cable parallel robot. With such structure, the manipulation workspace is always situated under the drones. The main idea of this project is to replace the cables by rigid bodies. With reconfiguration techniques developed on classic parallel robots, it will be possible to manipulate an object und… [...more]

View

RobEcolo

Singularity crossing of parallel robot

Project

View

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Research

Research Items (319)

Elastostatic Modelling of a Wooden Parallel Robot

Chapter Full-text available Jul 2018 · Computational Kinematics

Lila Kaci · Clément Boudaud · Sébastien Briot · Philippe Martinet

Eco-design of industrial robots is a field of research which has been rarely explored in the past. In order to considerably decrease the environmental impact of robot during the design phase, metal or carbon composite parts can be replaced by bio-sourced materials, such as wood. Indeed, wood has interesting mechanical properties, but its performance/dimensions will vary with the atmospheric conditions/external…

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Efficient Decentralized Collaborative Mapping for Outdoor Environments

Conference Paper Full-text available Jan 2018 · 2018 IEEE International Conference on Robotic Computing (IRC)

Luis F. Contreras-Samamé · Olivier Kermorgant · Philippe Martinet

An efficient mapping in mobile robotics may involve the participation of several agents. In this context, this article presents a framework for collaborative mapping applied to outdoor environments considering a decentralized approach. The mapping approach uses range measurements from a 3D lidar moving in six degrees of freedom. For that case, each robot performs a local SLAM. The maps are then merged when…

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Laser-Based Control Law for Autonomous Parallel and Perpendicular Parking

Conference Paper Jan 2018 · 2018 Second IEEE International Conference on Robotic Computing (IRC)

David Pérez Morales · Olivier Kermorgant · Salvador Dominguez Quijada · Philippe Martinet

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Design of an Industrial Wooden Robot. Award of the best poster presentation.

Poster File available Nov 2017 · 6èmes Journées Annuelles du GDR 3544 Sciences du bois.

Lila Kaci · Clément Boudaud · Sébastien Briot · Philippe Martinet

RobEcolo project

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The Kinematics, Dynamics and Control of a Flying Parallel Robot With Three Quadrotors

Article Nov 2017

offers novel possibilities for aerial robotics and manipulation. Previous work leads to the design of a flying parallel robot with two quadrotors.…

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Exciting trajectories for extrinsic calibration of mobile robots with cameras

Conference Paper Oct 2017 · 2017 IEEE 20th International Conference on Intelligent Transportation Systems (ITSC)

Bogdan Khomutenko · Gaetan Garcia · Philippe Martinet

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Adaptability of automated driving systems to the hazardous nature of road networks

Conference Paper Oct 2017 · 2017 IEEE 20th International Conference on Intelligent Transportation Systems (ITSC)

Yrvann Emzivat · Javier Ibanez-Guzman · Philippe Martinet · Olivier H. Roux

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Dynamic Driving Task Fallback for an Automated Driving System whose Ability to Monitor the Driving Environment has been Compromised

Conference Paper Full-text available Jul 2017 · 2017 IEEE Intelligent Vehicles Symposium (IV)

Yrvann Emzivat · Javier Ibanez-Guzman · Philippe Martinet · Olivier H. Roux

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Dynamic Driving Task Fallback for an Automated Driving System whose Ability to Monitor the Driving Environment has been Compromised

Poster File available Jul 2017 · 2017 IEEE Intelligent Vehicles Symposium (IV)

Yrvann Emzivat · Javier Ibanez-Guzman · Philippe Martinet · Olivier H. Roux

An Automated Driving System (ADS) is subject to hazardous weather conditions and to failures, both of which can result in a partial or total loss of its ability to monitor the driving environment. Yet until high driving automation and full driving automation is achieved, a human driver is expected to respond appropriately to any malfunction or adverse on-road conditions preventing the ADS from reliably sustaining the dynamic…

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Dynamic Modeling and Trajectory Tracking Controller of a Novel Flying Parallel Robot

Article Jul 2017

Six Damien · Abdelhamid Chriette · Sébastien Briot · Philippe Martinet

This paper presents a new flying robot, composed of two quadrotors linked by a rigid articulated passive chain. The robot obtained is similar to a parallel robot where the classic actuators have been replaced by flying drones. With its rigid structure presenting an internal degree of freedom, the robot presented is a step forward in flying robotics and presents new challenges for the design of its feedback control. In this paper the…

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A Controller Avoiding Dynamic Model Degeneracy of Parallel Robots during Singularity Crossing

Article Jun 2017

Sébastien Briot · Six Damien · Abdelhamid Chriette · Philippe Martinet

Parallel robots present singular configurations that divide the operational workspace into several aspects. It was proven that type 2 and leg passive joint twist system (LPJTS) singularities can be crossed with a trajectory respecting a given dynamic criterion. However, the practical implementation of a controller able to track such trajectories is up to now limited to restrictive cases of type 2 singularities crossing. Analyzing…

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Crossing type 2 singularities of parallel robots without pre-planned trajectory with a virtual-constraint-based controller

Conference Paper May 2017 · 2017 IEEE International Conference on Robotics and Automation (ICRA)

Rafael Balderas Hill · Six Damien · Abdelhamid Chriette · [...] · Philippe Martinet

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A Controller for Avoiding Dynamic Model Degeneracy of Parallel Robots During Type 2 Singularity Crossing

Chapter Jan 2017 · New Trends in Mechanism and Machine Science

Six Damien · Sébastien Briot · Abdelhamid Chriette · Philippe Martinet

Parallel robots presents singular configurations that divide the operational workspace into several aspects. It was proven that such singularities can be crossed under the constraint of a dynamic criterion. However, the practical implementation of a robust controller able to track such