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à la Faculté des sciences de base
laboratoire SuperScience
programme doctoral en SuperScience
École polytechnique fédérale de Lausanne
pour l'obtention du grade de Docteur ès Sciences
par

Paolino Paperino

acceptée sur proposition du jury :

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Prof Name Surname, directeur de thèse
Prof Name Surname, rapporteur
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Prof Name Surname, rapporteur

Lausanne, EPFL, 2021

The EPFL logo is displayed in a bold, red, sans-serif font. The letters are blocky and closely spaced, with the 'E' and 'P' being particularly prominent.

Wings are a constraint that makes
it possible to fly.
— Robert Bringhurst

To my parents...

Acknowledgements

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Lausanne, May 6, 2021

D. K.

Preface

A preface is not mandatory. It would typically be written by some other person (eg your thesis director).

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Lausanne, 12 Mars 2011

T. D.

Abstract

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Zusammenfassung

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Résumé

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Introduction

A non-numbered chapter...

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1 Shape Memory Alloys

In this chapter, a state of the art of shape memory alloys, their properties and their applications, are presented.

2 Modelling

In this chapter, different modelling strategies, such as finite element modelling and analytical modelling, are presented. Furthermore, the bias spring actuator model and a simplified model are presented.

3 Control Strategies

In this chapter, a basic simplified control strategy is investigated for characterization of SMAs. Furthermore, a basic analysis of sensorless SMA control is presented.

4 Bistable Actuator

In this chapter, a bistable mechanism is presented along with its implementation into an SMA actuator.

5 SMA Oscillator

Here, in this chapter, a novel control mechanical control strategy and SMA actuator is showcased and studied.

6 Biasing Compliant Mechanism Actuator

Using a compliant mechanism as a biasing element is a novel way to create an SMA actuator.

7 Compliant SMA Actuator

Using topology optimization to create a compliant SMA actuator can be used to develop novel compact multi-output actuators.

8 Kirigami Actuator

By extending the use of novel shapes to create SMA actuators, a kirigami pattern can be used to create SMA actuators with higher force output while still showcasing high strokes.

9 Heating strategies

After a brief state of the art for heating strategies, the principle of wireless heating is extended to actuate the novel SMA actuators with complex shapes.



Conclusion

A An appendix

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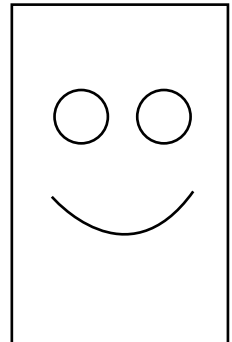
Bibliography

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Special experience : Europe work experience

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Personal profile:

As a Bachelor of Business Administration and after obtaining first relevant international work experience within the hospitality industry, I am now ready to take on new responsibilities to further my professional career. My key strengths include strong analytical and logical skills, an eye for detail, communication and interpersonal skills.
I enjoy working in a team and help others progress. At the same time I work well independently.
As a highly motivated and driven individual I strive on taking up challenges.

Interests:

Travelling
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Photography
Sports

Educational qualifications:

Oct 99 - Feb 02 Higher Diploma (Hotel Management)
Swiss Hotelmanagement School, SHL

Employment history:

Mar 04 - Ongoing	<p>Assistant Manager (Rooms Division/Food & Beverage)</p> <p>Hotel Atlantic Kempinski Hamburg www.kempinski.com 5 star business hotel, part of Leading Hotels of the World 412 guest rooms, large function facilities, 3 food & beverage outlets</p> <p>Optimization of bar procedures, reinforcing SOPs</p> <p>Developing & implementing promotions</p> <p>Responsible for day-to-day operations</p> <p>Optimization and streamlining of housekeeping and laundry procedures</p> <p>Implementation of new SOPs</p> <p>Analyzing monthly reports for rooms division performance and sub departments</p>
Mar 03 - Mar 04	<p>Management Trainee</p> <p>Hospitality Graduate Recruitment www.h-g-r.com Leading company for placements within the Hospitality industry.</p> <p>Traineeship covering all aspects of an online recruitment agency.</p>
Mar 02 - Mar 03	<p>Management Trainee (Rooms Division)</p> <p>Hyatt Regency Xian, China www.hyatt.com 5 star business hotel 404 guest rooms, 4 food & beverage outlets</p> <p>Traineeship covering all rooms division departments on operational as well as supervisory level.</p>

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References:

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