

Authors Here

PL4DS Shannon Book

September 2019

Publisher

Book dedication goes here.

Foreword

foreword, if applicable, goes here.

Place, month year

Firstname Surname

Preface

preface (preliminary statement about origin, scope, purpose, plan, and intended audience), if applicable, goes here.

Place(s),
month year

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List of Acronyms

A list of Acronyms, if needed, goes here.

API Application Programming Interface

HTTP HyperText Transfer Protocol

TCP Transmission Control Protocol

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Part I
Part Title

This is an optional part title page that can contain a Part description of max. 1 page.

Cyber-physical Systems

Carlos Varela and Damien Zufferey

Abstract Please place your abstract here.

1 Content

Please place your content here. See the sample template chapter for further reference on how you could style your content here.

Appendix

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Behavioural Types for Distribution

Simon Fowler and Keigo Imai

Abstract Please place your abstract here.

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1 Introduction

2 Background

2.1 Behavioural Types

2.2 Session Types

2.3 Desirable Properties

3 Behavioural Types and Distribution

3.1 Session Channels

3.1.1 Difficulties

3.1.2 Naïve approaches

3.1.3 Distributed Delegation Algorithms

3.1.4 Continuation-passing Approaches

3.2 Behavioural types for Actor Systems

3.2.1 Featherweight Erlang

3.2.2 Runtime Monitoring

3.2.3 Mailbox Types

4 Future Directions

4.1 Finagle

4.2 Failure handling and fault tolerance

5 Conclusion

6 Content

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Appendix

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Execution Models and Debugging

Stefan Marr and Hidehiko Masuhara

Abstract Please place your abstract here.

1 Content

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Appendix

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Consistency Models

Carlos Baquero and Carla Ferreira

Abstract Please place your abstract here.

1 Introduction (Carlos)

The following is the result of a focus group on consistency models. From the title the reader could expect a comprehensive survey of the subject. Instead, our goal is less ambitious and only to provide a vision of some of the dimensions that characterize this area and then offer the reader some open research directions. For a deeper coverage of the field we direct the reader to surveys on *non-transactional consistency models* [?], ...

(a couple more paragraphs on the focus of our discussion)

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2 Consistency at different scales (Carlos)

(say something about scale in terms of number of nodes and physical distance, the impacts of asynchrony and address the topics in comment. Contrast asynchronous geo-distributed systems with shared memory multi-core settings)

3 The two sides of the CAP frontier (TBA)

(refer the several papers that establish the most that can be done under partition tolerance. One side has causal consistency, the other runs coordination protocols. Note that escrow is a type of a-priory coordination, pair to pair, that helps with global invariants but is only live to some extent under partitions)

4 Walks around the frontier (TBA)

(talk about techniques that go around the CAP division. Using properties of data, like sharding into independent sets of objects for extra concurrency. Talk about grouping operations together for all or nothing execution.)

5 Research Directions

(create subsections that pick and expand some of the open topics in the notes)

5.1 Causal consistency at scale (TBA)

5.2 ... (TBA)

5.3 ... (TBA)

6 Conclusions (only to assign in the end)

Language Abstractions

Wolfgang De Meuter and Elisa Gonzalez Boix

Abstract Please place your abstract here.

1 Content

Please place your content here. See the sample template chapter for further reference on how you could style your content here.

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Orchestration Languages

Heather Miller and Sebastian Burckhardt

Abstract Please place your abstract here.

1 Content

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Cost-based and Quantitative Models

Nadeem Jamali

Abstract Please place your abstract here.

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3 Timed Rebeca

3.1 Syntax and Semantics

3.2 Modeling and Programming Tips

3.3 Analysis Support

3.4 Examples

4 CyberOrgs

4.1 Syntax and Semantics

4.2 Case Studies

4.2.1 System Resources

Meeting deadlines; Multi-tenancy; Grid computing; Power-efficiency

4.2.2 Attention Resources

Defragmenting time; Attention demand negotiation

5 Lessons Learned

6 Recommendations

6.1 Making Cost/Time/Resource/Ownership Explicit

6.2 Domains of Relevance

Appendix

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Distribution Layers

Patrick Eugster and Pascal Felber

Abstract Please place your abstract here.

1 Content

Please place your content here. See the sample template chapter for further reference on how you could style your content here.

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Example Template Chapter

Name of First Author and Name of Second Author

Abstract Each chapter should be preceded by a short abstract that summarizes the content.

1 Section Heading

Please note that the first line of text that follows a heading is not indented, whereas the first lines of all subsequent paragraphs are.

That is, this line right here.

2 Section Heading

Use the standard `equation` environment to typeset your equations, e.g.

$$a \times b = c , \quad (1)$$

however, for multiline equations you might use the `eqnarray` environment.

$$|\nabla U_\alpha^\mu(y)| \leq \frac{1}{d-\alpha} \int \left| \nabla \frac{1}{|\xi-y|^{d-\alpha}} \right| d\mu(\xi) = \int \frac{1}{|\xi-y|^{d-\alpha+1}} d\mu(\xi) \quad (2)$$

$$= (d-\alpha+1) \int_{d(y)}^{\infty} \frac{\mu(B(y,r))}{r^{d-\alpha+2}} dr \leq (d-\alpha+1) \int_{d(y)}^{\infty} \frac{r^{d-\alpha}}{r^{d-\alpha+2}} dr \quad (3)$$

Name of First Author

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Name of Second Author

Name, Address of Institute e-mail: `name@email.address`

2.1 Subsection Heading

Instead of simply listing headings of different levels we recommend to let every heading be followed by at least a short passage of text. Further on please use the \LaTeX automatism (ref, cite, etc.) for all your cross-references and citations.[?]

2.1.1 Subsubsection Heading

Simply use the `quotation` environment for quotations – it will automatically be rendered in line with the preferred layout.

For figures use the default `figure`.

Paragraph Heading

For typesetting numbered lists we recommend to use the `enumerate` environment – it will automatically rendered in line with the layout.

1. Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
 - a. Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
 - b. Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
2. Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.

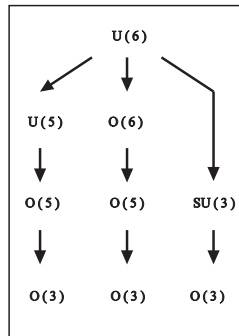
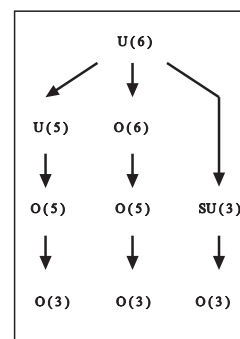


Fig. 1 Figure with default placement

Fig. 2 Figure with column placement**Table 1** Please write your table caption here

Classes	Subclass	Length	Action Mechanism
Translation	mRNA ^a	22 (19–25)	Translation repression, mRNA cleavage
Translation	mRNA cleavage	21	mRNA cleavage
Translation	mRNA	21–22	mRNA cleavage
Translation	mRNA	24–26	Histone and DNA Modification

^a Table foot note (with superscript)*Subparagraph Heading*

For unnumbered list we recommend to use the `itemize` environment – it will automatically be rendered in line with the layout.

- Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development, cf. Table 1.
 - Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
 - Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
- Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.

Run-in Heading Boldface Version Use the \LaTeX automatism for all your cross-references and citations as has already been described in Sect. 2.1.

Run-in Heading Boldface and Italic Version Use the \LaTeX automatism for all your cross-references and citations as has already been described in Sect. 2.1.

Run-in Heading Displayed Version

Use the \LaTeX automatism for all your cross-references and citations as has already been described in Sect. 2.1.

Use the `\index{}` command to code your index words.

For tables use **tabular** or **tabularx**.

3 Section Heading

If you want to list definitions or the like we recommend to use the enhanced description environment – it will automatically rendered in line with the layout.

- Type 1 That addresses central themes pertaining to migration, health, and disease. In Sect. 1, Wilson discusses the role of human migration in infectious disease distributions and patterns.
- Type 2 That addresses central themes pertaining to migration, health, and disease. In Sect. 2.1.1, Wilson discusses the role of human migration in infectious disease distributions and patterns.

3.1 Subsection Heading

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

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Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetur.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed vehicula hendrerit sem. Duis non odio. Morbi ut dui. Sed accumsan risus eget odio. In hac habitasse platea dictumst. Pellentesque non elit. Fusce sed justo eu urna porta tincidunt. Mauris felis odio, sollicitudin sed, volutpat a, ornare ac, erat. Morbi quis dolor. Donec pellentesque, erat ac sagittis semper, nunc dui lobortis purus, quis congue purus metus ultricies tellus. Proin et quam. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. Praesent sapien turpis, fermentum vel, eleifend faucibus, vehicula eu, lacus.

If you want to emphasize complete paragraphs of texts we recommend to use the newly defined class option `graybox` and the newly defined environment `svgraybox`. This will produce a 15 percent screened box 'behind' your text.

If you want to emphasize complete paragraphs of texts we recommend to use the newly defined class option and environment `svgraybox`. This will produce a 15 percent screened box 'behind' your text.

3.1.1 Subsubsection Heading

Theorem 0.1 *Theorem text goes here.*

Problem 0.1 You can place a problem here.

Problem 0.2 Another problem here.

Solution 0.1 And its solution here.

Definition 0.1 Definition text goes here.

Proof Proof text goes here.

Paragraph Heading

Instead of simply listing headings of different levels we recommend to let every heading be followed by at least a short passage of text. Further on please use the \LaTeX automatism for all your cross-references and citations as has already been described in Sect. 2.

Note that the first line of text that follows a heading is not indented, whereas the first lines of all subsequent paragraphs are.

Theorem 0.2 *Theorem text goes here.*

Definition 0.2 Definition text goes here.

Proof Proof text goes here. □

Trailer Head

If you want to emphasize complete paragraphs of texts in an `Trailer Head` we recommend to use

```
\begin{trailer}{Trailer Head}
...
\end{trailer}
```

? Questions

If you want to emphasize complete paragraphs of texts in an `Questions` we recommend to use

```
\begin{question}{Questions}
...
\end{question}
```

> Important

If you want to emphasize complete paragraphs of texts in an **Important** we recommend to use

```
\begin{important}{Important}
...
\end{important}
```

! Attention

If you want to emphasize complete paragraphs of texts in an **Attention** we recommend to use

```
\begin{warning}{Attention}
...
\end{warning}
```

If you want to emphasize complete paragraphs of texts in an **Program Code** we recommend to use **programcode** or, more sophisticated, the listings package.

Program Code

```
\begin{programcode}{Program Code}
\begin{verbatim}...\end{verbatim}
\end{programcode}
or the listings package:
\begin{lstlisting}[options] ... \end{lstlisting}
```

```
println("this is listing code");
```

Listing 1 Sample Java Code

Tips

If you want to emphasize complete paragraphs of texts in an **Tips** we recommend to use

```
\begin{tips}{Tips}
...
\end{tips}
```

Overview

If you want to emphasize complete paragraphs of texts in an **Overview** we recommend to use

```
\begin{overview}{Overview}
...
\end{overview}
```

Background Information

If you want to emphasize complete paragraphs of texts in an **Background Information** we recommend to use

```
\begin{backgroundinformation}{Background Information}
...
\end{backgroundinformation}
```

Legal Text

If you want to emphasize complete paragraphs of texts in an **Legal Text** we recommend to use

```
\begin{legalttext}{Legal Text}
...
\end{legalttext}
```

Acknowledgements If you want to include acknowledgments of assistance and the like at the end of an individual chapter please use the `acknowledgement` environment – it will automatically be rendered in line with the layout.

Appendix

You can place your appendix here, if needed. Note that you should not use the `\appendix` command, because it will continue numeric instead of alphabetical numbering from the main content. Alphabetical numbering is reserved for the global appendix. Use the starred versions of the section commands to suppress ongoing

numbering. If you need multiple appendixes, name them "Appendix 1", "Appendix 2", and so on.

$$a \times b = c \tag{4}$$

Appendix A

Chapter Heading

The global appendix of the book goes here.

A.1 Section Heading

Instead of simply listing headings of different levels we recommend to let every heading be followed by at least a short passage of text. Further on please use the \LaTeX automatism (cite, ref, etc.) for all your cross-references and citations.

A.1.1 Subsection Heading

Instead of simply listing headings of different levels we recommend to let every heading be followed by at least a short passage of text. Further on please use the \LaTeX automatism for all your cross-references and citations as has already been described in Sect. A.1.

For multiline equations we recommend to use the `eqnarray` environment.

$$\begin{array}{l} \mathbf{a} \times \mathbf{b} = \mathbf{c} \\ \mathbf{a} \times \mathbf{b} = \mathbf{c} \end{array} \quad (\text{A.1})$$

A.1.1.1 Subsubsection Heading

Fig. A.1 Please write your figure caption here

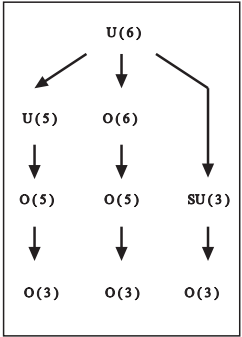


Table A.1 Please write your table caption here

Classes	Subclass	Length	Action Mechanism
Translation	mRNA ^a	22 (19–25)	Translation repression, mRNA cleavage
Translation	mRNA cleavage	21	mRNA cleavage
Translation	mRNA	21–22	mRNA cleavage
Translation	mRNA	24–26	Histone and DNA Modification

^a Table foot note (with superscript)

Glossary

Use this for a global glossary, if applicable.

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