

Brezžična senzorska omrežja

Uredila dr. Miha Janež in prof. dr. Nikolaj Zimic

april 2022

Navodila za izdelavo seminarske naloge

- Vaše datoteke se nahajajo v direktorijih `Skupina*`, kjer `*` predstavlja številko vaše skupine - glavna datoteka je `main.tex`.
- Slike shranjujte v svoj direktorij.
- Vse labelle začnite z znaki `g*`, kjer `*` predstavlja številko vaše skupine.
- Pri navajanju virov uporabite datoteko `references.bib`, ki se nahaja v korenskem direktoriju projekta.

V okviru seminarske naloge se boste ukvarjali z aplikacijami na področju brezžičnih senzorskih omrežij. Delo bo potekalo v skupinah z dvema članoma. Za skupinsko delo uporabljajte repozitorij, kot je npr. `dropbox`¹ ali `git`². Poročilo pišite v okolju LaTeX, kjer lahko za lažje skupinsko delo uporabljate okolje, kot je npr. `overleaf`³. Za iskanje virov uporabljajte iskalnike znanstvene literature⁴. Rok za izdelavo seminarske naloge je petek, 20. 5. 2022 do 12h. Predstavitve nalog bodo v terminih vaj 24. in 25. 5. 2022. Na predstavitvi seminarja bo imela vsaka skupina 10 minutno predstavitev svojega izdelka, nato bo sledila krajša diskusija.

Za predlogo uporabite strukturo znanstvenega članka, ki obsega poglavja Uvod, Metode, Rezultati, Zaključek in Literatura. Slike naj bodo v formatu PDF ali EPS, z ustreznimi viri (literaturo) polnite vašo BIB datoteko.

Oddana seminarska naloga naj vsebuje:

- izvirne datoteke poročila v LaTeXu (poročilo naj vsebuje približno 10 strani),
- poročilo v formatu pdf,
- prosojnice za predstavitev (predstavitev naj traja približno 10 minut),
- morebitno dodatno gradivo (programska koda itd.).

¹ <https://www.dropbox.com>

² <https://bitbucket.org>

³ <https://www.overleaf.com/>

⁴ <https://scholar.google.si>, www.sciencedirect.com, <https://www.scopus.com>, <https://arxiv.org>, <http://citeseerx.ist.psu.edu>

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Poglavje 1

Usmerjanje prometa z modulom nRF24L01

Mihael Rajh

Povzetek Abstrakt.

1.1 Uvod in motivacija

Opiši ad-hoc mobilna omrežja in njihove uporabe. Opiši tipične probleme, s katerimi se srečujemo.

Opiši DVR in link-state pristope. Opiši table-driven in on-demand pristope. Opiši razlog za implementacijo DSDV.

Opiši idejo za Bellman-Ford, DBF, in DSDV. Opiši DSDV podrobneje.

1.2 Uporabljene knjižnice in moduli

Opiši RF24 modul. Opiši specifične probleme, s katerimi se pri njem srečujemo. Opiši knjižnice, uporabljene pri delu.

1.3 Rešitev

Opiši shemo rešitve: določanje ID, določanje sosedov, izdelava tabel, in pošiljanje/branje sporočil.

Prikaži določanje ID z odsekom kode.

Prikaži določanje sosedov z odsekom kode.

Prikaži izdelavo tabel in odsek kode.

Prikaži branje/pisanje sporočil in odsek kode.

1.4 Eksperimenti in rezultati

Opiši 'dummy' funkcijo za preverjanje pravilnosti. Prikaži rezultate.

1.5 Zaključek

Ponovno opiši temo in algoritem. Opiši zasnovo rešitve in specifične implementacije.

Opiši ideje za praktično uporabo in pristope k testiranju.

Opiši ideje za izboljšavo in primerjavo z drugimi algoritmi.

Poglavje 2

Contribution Title

Name of First Author and Name of Second Author

Povzetek Please use the 'starred' version of the new Springer `abstract` command for typesetting the text of the online abstracts (cf. source file of this chapter template `abstract`) and include them with the source files of your manuscript. Use the plain `abstract` command if the abstract is also to appear in the printed version of the book.

2.1 Uvod in motivacija

Opis problema, ki ga naša rešitev reši. Pri opisu se običajno sklicujemo na reference, npr. [1, 2, 3].

2.2 Uporabljene knjižnice in moduli

Opis knjižnic in modulov, ki so bili uporabljeni za rešitev.

2.3 Rešitev

Podroben opis rešitve. Sem spadajo načrtovanje, struktura omrežja, opis sprogramiranih aplikacij in omrežij.

2.4 Eksperimenti in rezultati

Podroben opis eksperimentov in prikaz rezultatov.

2.5 Zaključek

Ali ste izpolnili cilje in možne nadaljnje nadgradnje.

2.6 Section Heading

Use the template *chapter.tex* together with the Springer document class `SVMono` (monograph-type books) or `SVMult` (edited books) to style the various elements of your chapter content in the Springer layout.

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

2.7 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 for all your cross-references and citations.

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

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

$$a \times b = c, \quad (2.1)$$

however, for multiline equations we recommend to use the `eqnarray` environment¹.

$$\begin{aligned} a \times b &= c \\ \vec{a} \cdot \vec{b} &= \vec{c} \end{aligned} \quad (2.2)$$

¹ In physics texts please activate the class option `vecphys` to depict your vectors in *boldface-italic* type - as is customary for a wide range of physical subjects

2.7.1 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. 2.7.

Please do not use quotation marks when quoting texts! Simply use the `quotation` environment – it will automatically render Springer’s preferred layout.

2.7.1.1 Subsubsection 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. 2.7.1, see also Fig. 2.1²

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

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. 2.7.

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

For typesetting numbered lists we recommend to use the `enumerate` environment – it will automatically render Springer’s preferred layout.

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

² If you copy text passages, figures, or tables from other works, you must obtain *permission* from the copyright holder (usually the original publisher). Please enclose the signed permission with the manuscript. The sources must be acknowledged either in the captions, as footnotes or in a separate section of the book.

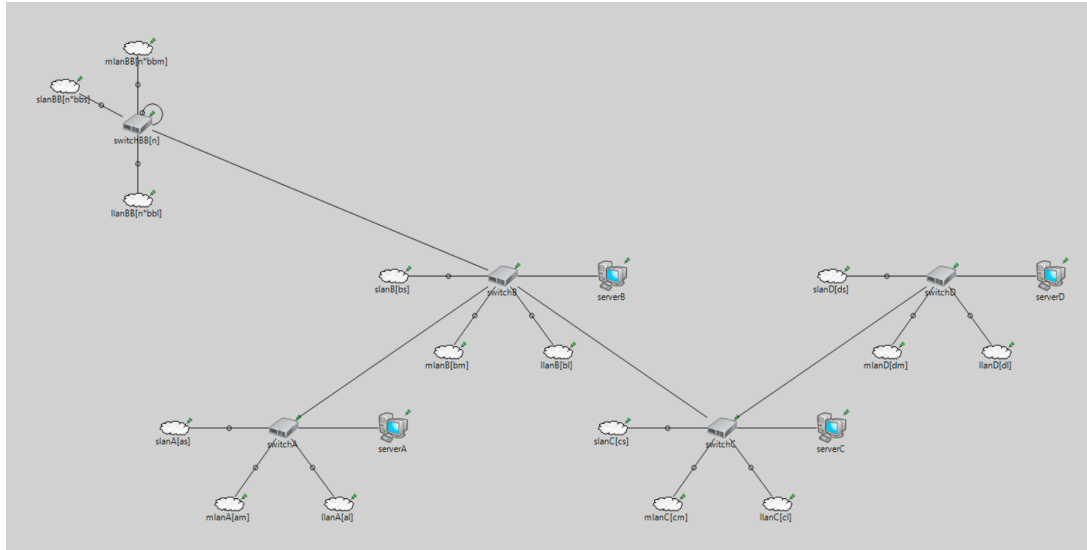
Subparagraph Heading

In order to avoid simply listing headings of different levels we recommend to let every heading be followed by at least a short passage of text. Use the \LaTeX automatism for all your cross-references and citations as has already been described in Sect. 2.7, see also Fig. 2.2.

For unnumbered list we recommend to use the `itemize` environment – it will automatically render Springer’s preferred layout.

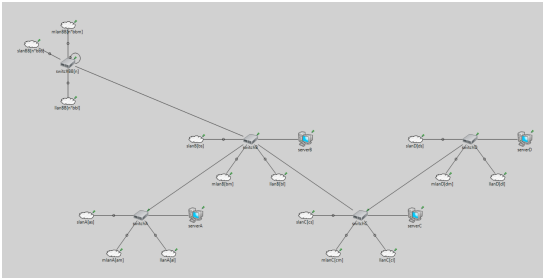
- Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development, cf. Table 2.1.
 - Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
 - Livelihood and survival mobility are oftentimes coutcomes of uneven socioeconomic development.
- 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. 2.7.



Slika 2.1: If the width of the figure is less than 7.8 cm use the `sidecaption` command to flush the caption on the left side of the page. If the figure is positioned at the top of the page, align the sidecaption with the top of the figure – to achieve this you simply need to use the optional argument `[t]` with the `sidecaption` command

Slika 2.2 If the width of the figure is less than 7.8 cm use the `sidecaption` command to flush the caption on the left side of the page. If the figure is positioned at the top of the page, align the sidecaption with the top of the figure – to achieve this you simply need to use the optional argument `[t]` with the `sidecaption` command



Run-in Heading Italic Version Use the \LaTeX automatism for all your cross-references and citations as has already been described in Sect. 2.7.

Tabela 2.1: 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)

2.8 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 for all your cross-references and citations as has already been described in Sect. 2.7.

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

If you want to list definitions or the like we recommend to use the Springer-enhanced `description` environment – it will automatically render Springer’s preferred layout.

- Type 1

That addresses central themes pertaining to migration, health, and disease. In Sect. 2.6, 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. 2.7.1, Wilson discusses the role of human migration in infectious disease distributions and patterns.

2.8.1 Subsection Heading

In order to avoid simply listing headings of different levels we recommend to let every heading be followed by at least a short passage of text. Use the \LaTeX automatism for all your cross-references and citations as has already been described in Sect. 2.7.

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

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

2.8.1.1 Subsubsection 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. 2.7.

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

Theorem 2.1. *Theorem text goes here.*

Definition 2.1. Definition text goes here.

Dokaz. Proof text goes here. \square

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. 2.7.

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

Theorem 2.2. *Theorem text goes here.*

Definition 2.2. Definition text goes here.

Dokaz. Proof text goes here.

□

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 render Springer’s preferred layout.

Appendix

When placed at the end of a chapter or contribution (as opposed to at the end of the book), the numbering of tables, figures, and equations in the appendix section continues on from that in the main text. Hence please *do not* use the `appendix` command when writing an appendix at the end of your chapter or contribution. If there is only one the appendix is designated “Appendix”, or “Appendix 1”, or “Appendix 2”, etc. if there is more than one.

$$a \times b = c \tag{2.3}$$

Literatura

1. W. source, "Operacijski sistem freertos." <https://www.freertos.org/>.
2. N. Zimic, "Brezžična senzorska omrežja," 2022.
3. K. Holger, *Ad hoc and Sensor Networks*. 2005.