Open source content 🗂? 

Note: slides are online: [github.com/Naereen/slides/tree/master/2018_10__Looking_for_and_organizing your_bibliographic_references__GouTP_at_CentraleSupelec](https://github.com/Naereen/slides/tree/master/2018_10__Looking_for_and_organizing your_bibliographic_references__GouTP_at_CentraleSupelec)
What's a "GouTP"?

- Internal monthly technical training session
- Usually: on Thursday, at 3pm - 3:30pm
- With coffee, tea and sweets: we relax while training!

Initiative of Quentin and Vincent in January 2017...
Continued by Rémi, Muhammad, Rami and Lilian!

Not only @ SCEE?

- Now open to all the PhD students of CentraleSupélec, campus of Rennes.
Agenda for today

1. Quick presentation of internal tools @ SCEE
2. How to look for bibliographic references?
3. How to organize your references: Zotero, JabRef & others.

Please 🙏

Ask questions and interrupt me if you want!
1. Presentation of internal tools @ SCEE

- Welcome to our new PhD student and interns 🙋‍♀️!
- You met (almost) everybody this week!
- You will become familiar with the research themes of our team…

→ Let see a few 🛠️ tools that can make your life easier!
Website

- www-scee.rennes.supelec.fr was created by Rémi and Aymeric
- It is maintained by Karim and Majed

New comers, please 🙏

- send a short summary of your research interest with links to your LinkedIn, Google Scholar profile (or other sites). Picture: *if you want*
- to Karim and Majed so we add you on the website
We have a MediaWiki running locally on http://172.16.6.219/
Welcome pack: can be useful in your first days here! http://172.16.6.219/mediawiki/index.php/Welcome_to_SCEE
Anyone can edit, it is maintained by Bastien and Lilian
Participate if you have anything to change (create an account, edit!)
Workstations 🖥️ (Windows & GNU/Linux)

- 2 Windows 7 workstations, with MATLAB
  - WS1: 172.16.6.211
  - WS2: 172.16.6.212

- 1 GNU/Linux (Ubuntu) workstation, with Python, GNU Radio...
  - WS3: 172.16.6.213

- Powerful machines: 12 cores, 32 Gb of RAM, lots of storage...

  (please check for use load, before launching heavy simulations)

👉 Ask for an account if you need

- To run computations, or to use the TestBed
- Ask to Rami for Windows, to Lilian for GNU/Linux
USRP TestBeds 📌

- We have 8 USRP cards that can be used from GNU Radio Companion on the WS3
- See more on http://172.16.6.219/mediawiki/index.php/Main_Page#Hardware

Monitoring🔍

- http://172.16.6.213:8080 (made by Quentin)
- let you see the IP of each USRP card
- and who uses what in real time

Advice🎉

- If you need to use the USRP, *discuss with Nabil and Lilian before*
### SCEETestbed Monitor

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2. How to look for bibliographic references?

⚠️ Do we need references?

- Yes

⚠️ But just for the paper right?

- No: you need references at every step of our research job!

⚠️ How to find references?

- We will see some techniques
Reading papers

- Each research paper has a list of references
- This always gives an easy way to find new references: just go read every quoted paper!
References

Lilian Besson and Emilie Kaufmann. What Doubling Trick Can and Can’t Do for Multi-Armed Bandits. Preprint, February 2018a. URL hal.inria.fr/hal-01736357.

Lilian Besson and Emilie Kaufmann. Multi-Player Bandits Revisited. In Algorithmic Learning Theory, Lanzarote, Spain, April 2018b. URL hal.inria.fr/hal-01629733.


References


Looking by keyword

- Try to look for some keywords, in Google Scholar, Google, DuckDuckGo, ResearchGate etc
- ❗ Some keywords will give a lot of results!
- Filter by language! Filter by date!
- Combine keywords!
Multi-Armed Bandit Learning in IoT Networks: Learning helps even in non-stationary settings. Rémi Bonnefoi, Lilian Besson, Christophe Moy, ...

Multi-Armed Bandit Learning in IoT Networks: Learning helps even in ...

Inria - Multi-Armed Bandit Learning in IoT Networks: Learning helps ...

(PDF) A Bandit Approach for Intelligent IoT Service Composition ...
GitHub - bgalbraith/bandits: Python library for Multi-Armed Bandits
https://github.com/bgalbraith/bandits
Python library for Multi-Armed Bandits. Contribute to bgalbraith/bandits development by creating an account on GitHub.

Topic: multi-armed-bandit · GitHub
https://github.com/topics/multi-armed-bandit
A multi-armed bandit library for Python ... A simple implementation of the multi_arm_bandit problem which can be used in Open AI gym as well.

SMPyBandits · PyPI
https://pypi.org/project/SMPyBandits/

[PDF] SMPyBandits: an Open-Source Research Framework for Single and ...
by L Besson - 2018 - Related articles
Feb 20, 2018 - algorithms and in different variations of the multi-armed-bandits problem. Contents ... This Python package is the most complete open-source ...
Looking by author

- If you know an author, it's easy to find his/her work
- It usually gives good references on related work!

Example?

- For examples, with my advisor Émilie Kaufmann…
Emilie Kaufmann

CNRS Junior Researcher at CRISTAL
emilie.kaufmann@univ-lille.fr

2017


2016

Google Scholar

- Many researchers have a Google Scholar profile
- But it is also very useful to look for new references
Multi-Armed Bandit Learning in IoT Networks: Learning helps even in non-stationary settings

R Bonnefoi, L Besson, C Moy, E Kaufmann, ... - ... Wireless Networks, 2017 - Springer

Abstract Setting up the future Internet of Things (IoT) networks will require to support more and more communicating devices. We prove that intelligent devices in unlicensed bands can use Multi-Armed Bandit (MAB) learning algorithms to improve resource exploitation. We ...

Multi-armed bandit channel access scheme with cognitive radio technology in wireless sensor networks for the internet of things

J Zhu, Y Song, D Jiang, H Song - IEEE access, 2016 - ieeexplore.ieee.org

... of applications various domains [2]–[16], big data applications, Internet of Things, E-commerce ... When cognitive users, namely, sensor nodes in wireless sensor networks access the spectrum ...

Machine learning paradigms for next-generation wireless networks

C Jiang, H Zhang, Y Ren, Z Han - IEEE Wireless, 2017 - ieeexplore.ieee.org

... This problem has indeed been encountered in many wireless networking scenarios, with a compelling one being the channel ... vice (D2D) communication system integrated into a cellular network, and another one in the context of emerging next-generation networks [16] ...

Bridging e-health and the internet of things: The sphere project

N Zhu, T Diether, M Campisi, L Tao ... - IEEE Intelligent, 2015 - ieeexplore.ieee.org

... aims is to integrate these various sensing modalities into an Internet of Things (IoT) solution for ... underpin a multimodality sensor system in a smart home, the IoT infrastructure must ... Additional advantages can be gained through IP-enabled sensing networks because they ...
A non-parametric test of independence
W. Hoefding - The annals of mathematical statistics, 1948 - JSTOR
A test is proposed for the independence of two random variables with continuous distribution function (df). The test is consistent with respect to the class $\Omega'$ of df's with continuous joint and marginal probability densities (pd). The test statistic $D$ depends only on the rank order of ... COVID-19 (2020), 1967 - projecteuclid.org

The central limit theorem for dependent random variables
Introduction. The central limit theorem has been extended to the case of dependent random variables by several authors (Bruns, Markoff, S. Bernstein, P. Lévy, and L. J. Love). The conditions under which these theorems are stated either are very restrictive or involve ... COVID-19 (2020), 1967 - projecteuclid.org

On the distribution of the number of successes in independent trials
Let $S$ be the number of successes in $n$ independent trials, and let $p_s$ denote the probability of success in the $j$th trial, $j = 1, 2, \ldots, n$ (Poisson trials). We consider the problem of finding the maximum and the minimum of $S$ as $S$ tends to ... COVID-19 (2020), 1967 - projecteuclid.org

The large-sample power of tests based on permutations of observations
The paper investigates the power of a family of nonparametric tests which includes those known as tests based on permutations of observations. Under general conditions the tests are found to be asymptotically (as the sample size tends to) as powerful as certain related ... COVID-19 (2020), 1967 - projecteuclid.org
ResearchGate

- Many researchers have a ResearchGate profile
- But it is also very useful to look for new references
- (same, just less popular than Google Scholar)

⚠️ Warning!

-⚠️ they have a very aggressive copyright policy!
- Suggestion: do as Rémi:
  - only upload a one-page PDF that links to the HAL version
Multi-Armed Bandit Learning in IoT Networks: Learning Helps Even in Non-stationary Settings

Rémis Bonnefoi\(^{(a)}\), Lilian Besson\(^{(a)}\), Christophe Moy\(^{(a)}\), Emilie Kaufmann\(^{(b)}\), and Jacques Palicot\(^{(b)}\)  
\(^{(a)}\)CentraleSupélec/IETR, CentraleSupélec Campus de Rennes Avenue de la Bodélique, 35510 Cesson-Scéne, France  
\(^{(b)}\)Univ. Lille 1, CNRS, Inria, SeQuel, Team, UMR 9189 – CRISAM, F-59000 Lille, France  
First.Last@CentraleSupélec.Univ-Lille1.fr

Full text available at: https://hal.archives-ouvertes.fr/hal-01575419

The matlab code is available at: https://bitbucket.org/see_letr/d_slotted_iot_networks
How to find the PDF of a research paper?

Once you know what to read, try this to find the paper:

1. Google Scholar / ResearchGate / Academia
2. Google / DuckDuckGo / your favorite search engine
3. The author's website! *Or directly ask them!*
4. arXiv search page (it's brand new and works perfectly well!),
5. or HAL search page, or arXiv-sanity
6. IEEEXplore : CentraleSupélec pays the license!
   
   `ieeexplore-ieee-org.bibliopam.supelec.fr`

7. Some hacky websites (use at your own risk),
   
   e.g., Sci-Hub → `WhereIsSciHub.Now.sh`

8. 😱 *Never pay yourself to read a research paper!* 😱
Scholarly articles for Multi-Armed Bandit Learning in IoT Networks: Learning helps even in non-stationary settings

Multi-Armed Bandit Learning in IoT Networks: Learning helps even in non-stationary settings. Rémi Bonnefoi, Lilian Besson, Christophe Moy, ...

[PDF] Multi-Armed Bandit Learning in IoT Networks: Learning helps even in ...
https://hal.archives-ouvertes.fr/hal-01575419/document
by R Bonnefoi - 2017 - Cited by 9 - Related articles
Jul 2, 2018 - Multi-Armed Bandit Learning in IoT Networks: Learning helps even in non-stationary settings. Rémi Bonnefoi, Lilian Besson, Christophe Moy, ...

Multi-Armed Bandit Learning in IoT Networks: Learning helps even in ...
https://arxiv.org/cs
by R Bonnefoi - 2018 - Cited by 9 - Related articles
Jul 2, 2018 - Computer Science > Networking and Internet Architecture ... Bandit Learning in IoT Networks: Learning helps even in non-stationary settings.

Multi-Armed Bandit Learning in IoT Networks: Learning Helps Even in ...
https://link.springer.com/chapter/10.1007/978-3-319-76207-4_15
by R Bonnefoi - 2017 - Cited by 9 - Related articles
Feb 17, 2018 - Multi-Armed Bandit Learning in IoT Networks: Learning Helps Even in ... near optimal performance even in non-stationary and non-Iid settings.


An Asymptotically Optimal Algorithm for Communicating Multiplayer Multi-Armed Bandit Problems
Noyan Evirgen, Alper Kose, Hakan Gokcesu
12/2/2017 cs.LG
This work is an extension of the paper [arXiv:1711.01628] which has been accepted to the 2017 IEEE...

We consider a decentralized stochastic multi-armed bandit problem with multiple players. Each player aims to maximize his/her own reward by pulling an arm. The arms give rewards based on i.i.d. stochastic Bernoulli distributions. Players are not aware about the probability distributions of the arms. At the end of each turn, the players inform their neighbors about the arm he/she pulled and the reward he/she got. Neighbors of players are determined according to an Erdős–Rényi $\alpha$-independent graph with connectivity $\alpha$. This graph is reproduced in the beginning of every turn with the same connectivity. When more than one player choose the same arm in a turn, we assume that only one of the players who is randomly chosen gets the reward where the others get nothing. We first start by assuming players are not aware of the collision model and offer an asymptotically optimal algorithm for $\alpha = 1$ case. Then, we extend our prior work and offer an asymptotically optimal algorithm for any connectivity but zero, assuming players aware of the collision model. We also study the effect of $\alpha$, the degree of communication between players, empirically on the cumulative regret by comparing them with traditional multi-armed bandit algorithms.

The Effect of Communication on Noncooperative Multiplayer Multi-Armed Bandit Problems
Noyan Evirgen, Alper Kose
11/5/2017 cs.LG
This work has been accepted to the 2017 IEEE ICMLA
Multi-Armed Bandit Channel Access Scheme With Cognitive Radio Technology in Wireless Sensor Networks for the Internet of Things
Jiang Zhu, Yonghui Song, Dingde Jiang, Houbing Song
IEEE Access
Year: 2016, Volume: 4
Page(s): 4609 - 4617
Cited by: Papers (17)
IEEE Journals & Magazines
Abstract (6428 Kb)

Social Intimacy Based IoT Services Mining of Massive Data
Anni Zhou, Yinan Feng, Pan Zhou, Jie Xu
2017 IEEE International Conference on Data Mining Workshops (ICDMW)
How to write paper and insert bibliography

- Use \textit{LaTeX}
- Use \textit{BibTeX} (or \textit{BibLaTeX})

Example (LaTeX \texttt{.tex} file and BibTeX \texttt{.bib} file):

```
\bibliographystyle{ieeetr} \% or alpha, or other style
\bibliography{myBibFile} \% at the end of the LaTeX file
```

```latex
@unpublished{SMPyBanditsHAL,
  title = {{SMPyBandits: an Experimental Framework for Single and Multi-Players Multi-Arms Bandits Algorithms in Python}},
  author = {Besson, Lilian},
  url = {https://hal.inria.fr/hal-01840022},
  note = {Presentation paper, at hal.inria.fr/hal-01840022},
  year = {2018},
}
```
Example: In the body of the article

For instance, in my numerical environment [Bes18], we can\(^3\) generate some change point if we assume that at every time step \(t = 1, \ldots, T\), there is a (small) probability \(p \in (0, 1)\) to have a change point. This is for instance the model considered in [AF17].

The number of change points \(\Upsilon_T\) should not be a constant w.r.t. \(T\) (otherwise when \(T \to \infty\) only the last section counts and give a stationary problem so it is not harder). Some algorithms require to know the value of \(\Upsilon_T\), or at least an upper-bound, and some algorithms try to be efficient without knowing it (this is what we want!).

**Limit case and harder case?** The goal is to have an efficient algorithm, but of course if \(\Upsilon_T = \Omega(T)\) the problem is too hard to hope to be efficient and any algorithm will suffer a linear regret (\(i.e.,\) be as efficient as a naive random strategy).

Moreover, letting an adversary choosing the location of the breakpoints is obviously harder, but it is still unclear how much harder.

**Applications?** This model makes sense from an application point of view if the action time scale is fast. For instance, using MAB for Internet of Things networks, like in [BBM\(^+\)17], if the dynamic devices are choosing channels for fast communications that happen, \(e.g.,\) every second, this abruptly changing problem could be interesting. For example for the connected agriculture setting, an abrupt change can correspond to a new farmer having equipped all of her/his cows with connected devices, as a large number of new devices in a network will abruptly change the availability or quality of some radio channels.
Example: In the reference list


Lazy way to organize your references

- Keep a bibtex file for each research project or paper,
- Fill it slowly and painfully everytime you think of a new reference
- Struggle a lot
- $\implies$ avoid this lazy solution

Lilian : I'm ashamed but I'm still at this level…
Smart way to organize your references

Use a dedicated software such as

- Zotero ⟹ ask me
- JabRef ⟹ ask Hussein
- Others (see full comparison by Munich University)

Why selecting this two ones

- Used by the team
- Cross-platform (Windows, Mac, Linux)
- Integration with text editors
- Open source ⟹ free
But what is this?

Goal

- To help you along
  - searching,
  - classifying,
  - inserting references in your papers.

Let's go for a quick walkthrough
Step 1: Download, install and setup

- Download and install from website (Zotero, JabRef, etc).
- Download and install browser add-on.
  - Zotero: Firefox, Chrome & Safari
  - JabRef: Firefox only
- Setup synchronization.
  - Backup your bibliography
  - Share your bibliography
- Setup CentraleSupelec proxy if you want to access IEEExplore with connector.
Setup proxy to access IEEEExplore

Configured Proxies

- ProxyHost: %h.s.bibliopam.supelec.fr, %p

Automatically associate new hosts: 
Automatically convert between dots and hyphens in provided hostnames

Scheme: %h.s.bibliopam.supelec.fr,%p

Hostnames:
- ieeeexplore.ieee.org
Step 2: Develop your bibliography

On both Zotero & JabRef

- Import files from your computer
- Save pages from your web browser
  - Papers
  - Web pages
  - Wikipedia...

On JabRef

- Search for papers on IEEEExplore, arXiv, Google Scholar...
Step 3: Classify your bibliography

On both Zotero & JabRef

- Classify into collections to sort documents by topics.
- Automatic fetch of meta-data.
- Search based on author, date, conferences...
- Add notes and comments.

On Zotero

- Add markers and use them to find articles.
- Construct a chronology.
This paper proposes a flexible dual-mode soft-output multiple-input multiple-output (MIMO) detector to support open-loop and closed-loop in Chinese enhanced ultra-high throughput (EUHT) wireless local area network (LAN) standard. The proposed detector uses minimum mean square error (MMSE) sorted QR decomposition (MMSE-SQRD) to produce channel preprocessing result, which is realized by a modified systolic array architecture with concurrent sorting. Moreover, the adopted square-root MMSE algorithm for closed-loop reuses MMSE-SQRD preprocessing to largely save hardware overhead. In addition, an optimized K-Best detection algorithm is proposed for open-loop, which increases throughput by odd-even parallel...
Step 4: Add references to your documents

- Application plugins to quick reference insertions
  - JabRef: Emacs, Lyk, TeXstudio, Vim...
  - Zotero: LibreOffice, Word...

- Export a list of references as
  - BibTex and other LaTeX formats
  - IEEE style and other ordinary styles for copy & paste
Globally Asynchronous Locally Synchronous (GALS) Systems have provoked renewed interest over recent years as they have the potential to combine the benefits of asynchronous and synchronous design paradigms. It has been applied to ASICs, but not yet applied to FPGAs. In this paper we propose applying GALS techniques to FPGAs in order to overcome the limitation on timing imposed by slow routing.
Export as IEEE style for copy & paste
Output


Tips & tricks

• Save all papers that you read.

• Save also usefull web pages, newspaper articles...
  
  ○ ⚠️ Don't forget to add few information about the content

• A few minutes to lose now but hours to save later.
Conclusion (1/3)

Sum-up

• We showed you techniques to look for new references, and to find and download the PDF (legally)
• We showed you some softwares to manage your bibliography

Pointers

• scholar.google.com
• archives-ouvertes.fr & arxiv.org
• duckduckgo.com ❤️
• zotero.org and jabref.org
Conclusion (2/3)

Next GouTP @ SCEE

- Any request or suggestion?

We need participants!

👉 By you? Any idea is welcome! 😊

Contact us if you want to do a GouTP!
Conclusion (3/3)

Your mission, if you accept it… 🌟

1. *Padawan level*: be smart about how you look for new references.

2. *Jedi level*: organize **and backup** your references and BibTeX files!

3. *Master level*: publish so many papers that your name will be in the BibTeX files of half the planet (*yes we can!*).