Agenda

CS Experiments

HW4
Experiments

What experiments are useful?
Critical for the main arguments of the paper

What experiments are not useful?
Pointless experiments that generate pointless numbers, graphs, and tables
Types of Experiments

From the “context” perspective
Controlled
Uncontrolled

There are other perspectives to be covered in future lectures
Group Activity

Experiment Design

Metric Selection
Group 1

A new algorithm that translates English text to Spanish.
Group 2

A new wireless networking technology.
Group 3

Impact of doing court proceedings in metaverse.

Figure 3.1. This diagram shows the headings that must be used for this science paper. Please pay careful attention to the boxes with arrows pointing at each elliptical heading box. These boxes are reminders of the content that belongs with each heading.

Types of Papers (mechanical)

- Technical Reports
  - Project description
  - Research paper
- Conference
- Journal
- Magazine

Find out what type your group and community writes.
Which papers are more important?

- Conference
- Journal
- Magazine
- Impact factor
- CORE ranking

What makes a paper more important than others?
Types of Papers (purpose)

Research Paper
Survey Paper
Tutorial
Technical Report
- E.g., NIST, Other Orgs
White Paper
Vision Paper
Challenge Paper
Publications – Looking Ahead

Blogs?
Facebook?
Twitter?
LinkedIn?
GitHub?
YouTube?
arXiv?
…..
Citation and References

Clean! Clean! Clean!
(esp. for websites, links, datasheets)

Consistency! Consistency! Consistency!
Examples
References

Can take a long time to format references.

Is it worth it?
Language independent analysis and classification of discussion threads in Coursera MOOC forums

LA Rossi, O Gnawali - ... Reuse and Integration (IRI), 2014 IEEE ..., 2014 - ieeexplore.ieee.org

Aside from students and instructors, other categories of Coursera forum users are Course Staff (teach-655 Page 3 ... 4.1. Different usages of posts and comments As we mentioned in Sec. a discussion thread on a Coursera forum is composed of posts and possibly com- ments ...

Cited by 38  Related articles  All 7 versions  ⚪️


Room occupancy estimation through wifi, UWB, and light sensors mounted on doorways

Hessam Mohammadmoradi  
Shengrong Yin  
Omraksh Gnaawal  
University of Houston

Published in:
Proceedings of the 2017 International Conference on Smart Digital Environment
Rabat, Morocco — July 21 - 23, 2017
ACM New York, NY, USA ©2017
ISBN: 978-1-4503-5281-9
DOI: 10.1145/3128128.3128133

Bibliometrics
- Citation Count: 0
- Downloads (cumulative): 116
- Downloads (12 Months): 86
- Downloads (6 Weeks): 1

Export Formats
BibTeX  |  EndNote  |  ACM Ref

Exporting

Title: Room Occupancy Estimation Through Wifi, UWB, and Light Sensors Mounted on Doorways
Proceedings of the 2017 International Conference on Smart Digital Environment
Rabat, Morocco — July 21 - 23, 2017
ACM New York, NY, USA ©2017
ISBN: 978-1-4503-5281-9
DOI: 10.1145/3128128.3128133

Citations
ACM Digital Library
Towards Embedded Visible Light Communication Robust to Dynamic Ambient Light

Abstract:
The presence of ambient light is a key challenge for reliable and robust low cost embedded visible light communication systems. The photodetector used by these systems can perform poorly when subjected to bright ambient light or fluctuating ambient light. To solve this problem, we present an ambient light cancellation mechanism for low cost embedded LED to photodiode communication systems that utilizes a digital potentiometer to adaptively nullify the ambient light to provide an always ZERO output no matter what the ambient light intensity is. The proposed technique allows the receiver to correctly receive the light transmitted by the transmitter without any interference from the ambient light. We provide a detailed description of the modulation and demodulation schemes as well as ambient light cancellation mechanism, and their evaluations. The results show our proposed system can provide a reliable and robust visible light communication with extremely low symbol error rate (almost 0) and an acceptable data rate up to 20kbit/s given an operating distance of 50 centimeters.

Published in: 2016 IEEE Global Communications Conference (GLOBECOM)

Date of Conference: 4-8 Dec. 2016
Date Added to IEEE Xplore: 06 February 2017
DOI: 10.1109/GLOCOM.2016.7842344
Publisher: IEEE
Conference Location: Washington, DC, USA

@INPROCEEDINGS{7842344,
author={S. Yin and O. Gnawati},
booktitle={2016 IEEE Global Communications Conference (GLOBECOM)},
title={Towards Embedded Visible Light Communication Robust to Dynamic Ambient Light},
year={2016},
volume={},
number={},
pages={1-6},
keywords={modulation;free-space optical communication;interference suppression;light emitting diodes;optical modulation;photodetectors;photodiodes;dynamic ambient light fluctuation;robust low-cost embedded visible light communication system;reliability;photodetector;photodiode communication system;low-cost embedded LED;digital potentiometer;modulation scheme;demodulation scheme;ambient light cancellation mechanism;distance 50 cm;Receivers:Photodiodes:Robustness;Modulation;Prototypes},
doi={10.1109/GLOCOM.2016.7842344},
ISSN={},
month={Dec},}


References - 2


Citations

• Systems and artifacts
  – Generally immediately after the names
    AnguLoc [5] is better than SideLoc[6].

• Narrative
  – Generally at the end of the sentence

  Researchers have made a lot of progress in this field
  in the last five years [6]
This solution is scalable as the number of transmitting anchors can be small and can be scheduled in different time slots. With the usage of inter-anchor concurrency, solutions like AnguLoc [1] managed to make it more efficient. However, this architecture is not cost-effective as described earlier.

In addition to that, new light-emitting technologies, such as LEDs, become more popular and accessible, enabling new perspectives for optical wireless communication [7], [8]. Finally, the increasing interest and exploration of the

Bad form:

[1] presents a new technique.
Citation Format

Number: [n]
Author / year: [Gnawali et al. 2020]
In text without [] or (), e.g., Gnawali et al. proposed a new technique.

Consult the instruction for your conference or journal. Number [n] format common in our fields.
HW4

Introduction

Your writeup should answer all the questions we discussed in the stated sequence.