Agenda

HW2 Live Grading
Research Paper Anatomy and Types
Citations
Assignment
Recap of research formulation questions

Coffee machine pitch
Anatomy of a Research Paper

Abstract
Introduction
Related Work
Design and Implementation
Evaluation
Conclusion
Related Work

• Keep it organized

• Keep it in groups

• Related your work to the group, to individual work if necessary
We looked at a few samples of related work
The Body of the paper

Depending on the area of work may describe the proposed algorithm, proofs, systems, implementations
Evaluation

Description of experiments and metrics
Results of experiments
Implications of those results

More applicable to the applied areas of computer science.
Conclusions

Not the same as abstract
Short summary of what you did in the project and the implications of the results
Can include lessons learnt and future directions
How do the answers map to these questions to the different parts of a paper?
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

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
There is no standard citation format
Different communities
   APA, Chicago, ..................
Different conferences/journals
   ACM, IEEE, ...........

Learn how to use tools
   BibTex
   Online Services (e.g., Mendeley)
      Demo: Google Scholar, IEEE, ACM
   Word
Citation

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

Consistency! Consistency! Consistency!
Examples
Citations

Can take a long time to format citations.

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

Hessam Mohammadmoradi
Shengrong Yin
Omprakash Gnawali

University of Houston
University of Houston
University of Houston

Proceedings of the 2017 International Conference on Smart Digital Environment
Pages 27-34
July 21 - 23, 2017
Rabat, Morocco

Export Formats

BibTeX | EndNote | ACM Ref

#inproceedings(Mohammadmoradi:2017:ROE:3128128.3128133,
author = {Mohammadmoradi, Hessam and Yin, Shengrong and Gnawali, Omprakash},
title = {Room Occupancy Estimation Through Wifi, UWB, and Light Sensors Mounted on Doorways},
booktitle = {Proceedings of the 2017 International Conference on Smart Digital Environment},
year = {2017},
isbn = {978-1-4503-5281-9},
location = {Rabat, Morocco},
pages = {27--34},
numpages = {8},
url = {http://doi.acm.org/10.1145/3128128.3128133},
doi = {10.1145/3128128.3128133},
acmid = {3128133},
publisher = {ACM},
address = {New York, NY, USA},
keywords = {channel state information, people counting, wireless sensing},
)
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 system. 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 5kbps given an operating distance of 50 centimeters.

Authors

Published in: 2016 IEEE Global Communications Conference (GLOBECOM)

Date of Conference: 4-8 Dec. 2016

DOI: 10.1109/GLOCOM.2016.7842344

@INPROCEEDINGS{7842344,
  author={S. Yin and O. Gnawali},
  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={demodulation;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},}


HW3 – Related Work

Pick 10 “important” papers related to your research

Write two sentences about each work:
  Main contributions
  Main weakness

Pick one paper and improve the related work section of that paper.