Structure



Paper Structure Elements of a manuscript

Title

Abstract

Keywords

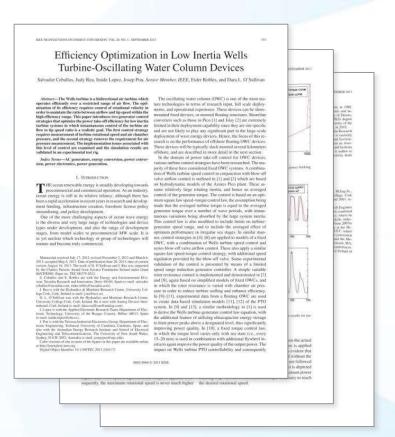
Introduction

Methodology

Results/Discussions/Findings

Conclusion

References





Paper Structure Title

An effective title should...

- •Answer the reader's question: "Is this article relevant to me?"
- •Grab the reader's attention
- Describe the content of a paper using the fewest possible words
 - Is crisp, concise
 - Uses keywords
 - Avoids jargon

Good Title

VS.

Bad
Title



Paper Structure

Good vs. Bad Title

A Human Expert-based Approach to Electrical Peak Demand Management

VS

A better approach of managing environmental and energy sustainability via a study of different methods of electric load forecasting



Paper Structure

Good vs. Better Title

An Investigation into the Effects of Residential Air-Conditioning Maintenance in Reducing the Demand for Electrical Energy

VS

"Role of Air-Conditioning Maintenance on Electric Power Demand"



Paper Structure Abstract

What you did A "stand alone" condensed version of the article No more than 250 words; Why you did it written in the past tense Uses keywords **How the results** and index terms were useful, important & move the field forward Why they're useful & important & move the field forward



Paper Structure

Good vs. Bad Abstract

The objective of this paper was to propose a human expert-based approach to electrical peak demand management. The proposed approach helped to allocate demand curtailments (MW) among distribution substations (DS) or feeders in an electric utility service area based on requirements of the central load dispatch center. Demand curtailment allocation was quantified taking into account demand response (DR) potential and load curtailment priority of each DS, which can be determined using DS loading level, capacity of each DS, customer types (residential/commercial) and load categories (deployable, interruptible or critical). Analytic Hierarchy Process (AHP) was used to model a complex decision-making process according to both expert inputs and objective parameters. Simulation case studies were conducted to demonstrate how the proposed approach can be implemented to perform DR using real-world data from an electric utility. Simulation results demonstrated that the proposed approach is capable of achieving realistic demand curtailment allocations among different DSs to meet the peak load reduction requirements at the utility level.

Vs

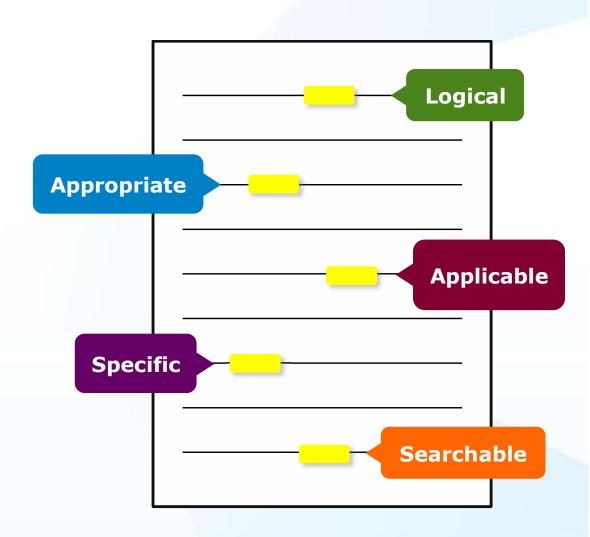
This paper presents and assesses a framework for an engineering capstone design program. We explain how student preparation, project selection, and instructor mentorship are the three key elements that must be addressed before the capstone experience is ready for the students. Next, we describe a way to administer and execute the capstone design experience including design workshops and lead engineers. We describe the importance in assessing the capstone design experience and report recent assessment results of our framework. We comment specifically on what students thought were the most important aspects of their experience in engineering capstone design and provide quantitative insight into what parts of the framework are most important.

First person, present tense
No actual results, only describes the organization of the paper



Paper Structure Keywords

Use in the Title and Abstract for enhanced Search Engine Optimization





Paper Structure Introduction

- A description of the problem you researched
- It should move step by step through, should be written in present tense:

Generally known information about the topic

Prior studies'
historical
context to your
research

Your hypothesis and an overview of the results

How the article is organized

- The introduction should <u>not be</u>
 - Too broad or vague
 - More then 2 pages



Paper Structure Methodology

- Problem formulation and the processes used to solve the problem, prove or disprove the hypothesis
- Use illustrations to clarify ideas, support conclusions:

Tables

Present representative data or when exact values are important to show



Figures

Quickly show ideas/conclusions that would require detailed explanations



Graphs

Show relationships between data points or trends in data





Paper Structure Results/discussion

Demonstrate that you solved the problem or made significant advances

Results: Summarized Data

- Should be clear and concise
- Use figures or tables with narrative to illustrate findings

Discussion: Interprets the Results

- Why your research offers a new solution
- Acknowledge any limitations

the SC algorithm over the whole range of ω values increase to 3-4 K, except for the TIGR(+11 database, with an RMSE of 2 K. This last result is explained by the w distribution. which is biased toward low values of w in this database. When only atmospheric profiles with w values lower than 3 g - cm 2 are selected, the SC algorithm provides RMS around 1.5 K, with almost equal values of bias and standars deviation, around I K in both cases (with a negative bias, thus the SC underestimates the LST). In contrast, when only w values higher than 3 g - cm⁻² are considered, the SC algorithm provides RMSEs higher than 5 K. In these cases, it is preferable to calculate the atmospheric functions of the SC algorithm directly from (3) rather than approximating them by a polynomial fit approach as given by (4).

V. DISCUSSION AND CONCLUSION The two Landsot-3 TIR bands allow the intercomparison of two LST retrieval methods based on different physical

ps, such as the SC (only one TIR band required)

ithms (two TIR bands required). Direct inversion we transfer equation, which can be considered prithm, is assumed to be a "ground-truth" **Discussion** condition that the information about the and L_d) is accurate enough. The SC algoin this letter is a continuation of the previous SC veloped for Landsot-4 and Landsot-5 TM sensors, the ETM+ sensor on board the Landsot-7 platform. [9], and it could be used to generate consistent LST products from the historical Landsat data using a single algorithm. An advantage of the SC algorithm is that, apart from surface emissivity, only water vapor content is required as input. However, it is expected that errors on LST become unacceptable for high writer vapor contents (e.g., > 3 g - cm⁻²). This problem can be purify solved by computing the atmospheric functions directly from τ , L_{ω} , and $L_{\mathcal{L}}$ values [see (5)], or also by including sir temperature as input [15]. A main advantage of the SW algorithm is that it performs well over global conditions and, thus, a wide range of water vapor values; and that it only requires water vapor as input (apart from surface emissivity at the two TIR bands). However, the SW algorithm can be only applied to the new Landant-S TIRS data, since previous TM/ETM sensors only had one TIR band.

The LST algorithms presented in this letter were tested with simulated data sets obtained for a variety of global atmospheric conditions and surface emissivities. The results showed RMSE values of typically less than 1.5 K, although for the SC algorifhm, this accuracy is only achieved for w values below 3 g - cm⁻². Algorifhm teeting also showed that the SW errors are lower than the SC errors for increasing water vapor, and vice verso, or demonstrated in the simulation study presented in Sobrino and Jiménez-Muñoz [18]. Although an extensive validation exercise from in sits measurements is required to assess the performance of the two LST algorithms, the results obtained for the simulated data, the sensitivity analysis, as well as the previous findings for algorithms with the same mathemotical structure give confidence in the algorithm accuracies

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Results

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Paper Structure Conclusion

- Explain what the research has achieved
 - As it relates to the problem stated in the Introduction
 - Revisit the key points in each section
 - Include a summary of the main findings, important conclusions and implications for the field
- Provide benefits and shortcomings of:
 - The solution presented
 - Your research and methodology
- Suggest future areas for research





Paper Structure References

- Support and validate the hypothesis your research proves, disproves or resolves
- There is no limit to the number of references
 - But use only those that directly support our work
- Ensure proper author attribution
 - Author name, article title, publication name, publisher, year published, volume, chapter and page number
 - IEEE journals generally follow a citation numbering system

Properly

cited material

 $(P_t^{s,+} + P_t^{s,-})^2 = (P_t^{s,+} - P_t^{s,-})^2 + 4P_t^{s,+}P_t^{s,-}$ $<(\hat{P}_{t}^{s,1}-\hat{P}_{t}^{s,-})^{2}+4\hat{P}_{t}^{s,+}\hat{P}_{t}^{s}$

Since $P_{i}^{s,+} - P_{i}^{s,-} = \hat{P}_{i}^{s,+} - \hat{P}_{i}^{s,-}$, we then have $P_{i}^{s,+} < P_{i}^{s,+}$ and $P_i^{*-} \in P_i^{*-}$. Because the operational cost is an increasing function of $\{P_i^{a,+}, P_i^{a,-}\}$, we obtain that

 $c_{n/m}(P_t^{s,+}, P_t^{s,-}) < c_{n/m}(P_t^{s,+}, P_t^{s,-}).$

Therefore the optimal pair $\{P_i^{a,+}, P_i^{a,-}\}$ must satisfy that $P_i^{a,+}P_i^{a,-}=0$, i.e., only one of $P_i^{a,+}, P_i^{a,-}$ can be non-zero.

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Peng Yang (5'11) received the II.Sc degree in electrical engineering from University of Science and Technology, Anhari, Chica in 2009, and the M.Sc and Ph.D. degrees in electrical engineering from Washington University in St. Louis, St. Louis, MO, USA, in 2011 and 2014, respectively. His Ph.D. advisor is Dr. Arve Neborai.

Alie research interests include statistical signal processing, contrapation, machine learning, and erve sensing with applications to amort



Arve Neberal (STR)-MTEI-SMT90-FT94) receive the B.Sc. and M.Sc. degrees from the Technico, Heils, local, and the Ph.D. degree from Stanford University, Resided, CA, USA.

He is the Eugene and Martin Lohman Professor and Chair of the Posston M. Green Department of Electrical and Systems Engineering (ESE) at Westington University in St. Louis (WUSTL), St. Louis. MO, USA. Earlier, he was a facely member at Natural University and the University of Himse at Chicago. Dr. Neboni: served as Editor-in-Chief of Hill.

Transport to risk on Spirital, Processions from 2000 to 2002, Proce 2000 to 2005 he was the Vice President of the IEEE Signal Processing Society (XPS), the Chair of the Publications Board, and a member of the Describe Committee of this Society. He was the founding Editor of the special columns on Leadership Reflections in AUO's Signal Processing Adaptates from 2003 to 2006. He has been a Fellow of the ICES since 1994, the Koyal Statistical Society since 1994, and the AAAS since 2012



Writers last task once all sections are written:

- How do they fit together?
- Does each section perform its appointed task?
- Is the order logical?
- Do the ideas flow together? Is it easy to read?
- Does the same material appear more than ones?
- Can it be clearer?
- Is there enough detail?

