Ref.

Date :

3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during the last Five years

INDEX

Shri Shankarprasad Agnihotri College of Engineering WARDHA

PRINCIPAL
Shri Shankarprasad Agnihotri
College of Engineering, WARDHA

Alexandria Engineering Journal (2023) 74, 107–119

HOSTED BY

ELSEVIER

Alexandria University

Alexandria Engineering Journal

www.elsevier.com/locate/aej
www.sciencedirect.com

ORIGINAL ARTICLE

Performance improvement and CO and HC emission reduction of variable compression ratio spark-ignition engine using n-pentanol as a fuel additive

Chandrakant B. Kothare [a,*], Suhas Kongre [b], Prateek Malwe [c,d], Kamal Sharma [e], Naef A.A. Qasem [f], Ümit Ağbulut [g], Sayed M. Eldin [h], Hitesh Panchal [i,*]

[a] *Deptartment of Mechanical Engineering, Shri Shankar Prasad Agnihotri College of Engineering, India*
[b] *Department of Mechanical Engineering, A.S.Polytechnic, India*
[c] *Department of Mechanical Engineering, Walchand Engineering College, Sangli, Maharashtra, India 416415*
[d] *Department of Mechanical Engineering, Dr. D. Y. Patil Institute of Technology, Pimpri, Pune, Maharashtra, India*
[e] *Department of Mechanical Engineering, GLA University, Mathura, India*
[f] *Department of Aerospace Engineering and Interdisciplinary Research Center for Aviation & Space Exploration, King Fahd University of Petroleum & Minerals, Dhahran 31261, Saudi Arabia*
[g] *Department of Mechanical Engineering, Faculty of Engineering, Düzce University, 81620 Düzce, Türkiye*
[h] *Center of Research, Faculty of Engineering, Future University in Egypt, New Cairo 11835, Egypt*
[i] *Department of Mechanical Engineering, Government Engineering College Patan, Gujarat, India*

Received 4 October 2022; revised 27 April 2023; accepted 4 May 2023
Available online 17 May 2023

KEYWORDS

Ethanol-gasoline;
N-pentanol;
Blends;
Petrol engines;

Abstract This study tests binary and ternary n-pentanol, ethanol, and petrol blends to increase spark-ignition (SI) engine performance and minimize CO and HC emissions. To improve brake thermal efficiency (BTE) and reduce emissions, adding ethanol into gasoline is one of the practices used in Automobiles. But the literature reported some performance limitations and problems with adding a high ethanol concentration to gasoline as phase separation problem occurs in fuel tank due

Abbreviations: BSFC, Brake-specific fuel consumption; BTE, Brake thermal efficiency; C.R., Compression ratios; CO, Carbon monoxide; CO_2, Carbon dioxide; E0, Gasoline; E10, 10% ethanol and 90% gasoline by volume; E10P1.5, 10% ethanol, 1.5% n-pentanol, and 88.5% gasoline by volume; E10P2.5, 10% ethanol, 2.5% n-pentanol, and 87.5% gasoline by volume; E10P3.5, 10% ethanol, 3.5% n-pentanol, and 86.5% gasoline by volume; E5, 5% ethanol and 95% gasoline by volume; E15, 15% ethanol and 85% gasoline by volume; FTIR, Fourier transform infrared spectroscopy; HC, Hydrocarbon; M5, 5% methanol and 95% gasoline by volume; M10, 10% methanol and 90% gasoline by volume; MON, Motor octane number; NDIR, Non-dispersive infrared; NOx, Nitrogen oxides; O_2, Oxygen; P10, 10% n-pentanol and 90% gasoline by volume; P5, 5% n-pentanol and 95% gasoline by volume; RON, Research octane number; RVP, Reid vapor pressure; SI, Spark ignition; VCR, Variable Compression Ratio

* Corresponding authors.
E-mail addresses: chandrakant.kothare@rediffmail.com (C.B. Kothare), prateek0519@gmail.com (P. Malwe), engineerhitesh2000@gmail.com (H. Panchal).

Peer review under responsibility of Faculty of Engineering, Alexandria University.

https://doi.org/10.1016/j.aej.2023.05.024

Electric Power Components and Systems, 0(0): 1–15, 2023

ISSN: 1532-5008 print / 1532-5016 online
DOI: 10.1080/15325008.2023.2242850

Servomotor Pitching Control Method for H-Type Darrieus Turbine

Ramesh K. Kavade,[1] P. M. Ghanegaonkar,[2] Prateek D. Malwe ,[1#] Chandrakant Kothare,[3] Prashant Darade,[4] Ghanashyam M. Chendke,[5] Hitesh Panchal,[6] Radhey Shyam Meena,[7] and Ibham Veza[8]

[1]Department of Mechanical Engineering, Dr. D. Y. Patil Institute of Technology, Savitribai Phule Pune University, Pune, Maharashtra, India

[2]Department of Mechanical Engineering, Indira College of Engineering, Savitribai Phule Pune University, Pune, Maharashtra, India

[3]Department of Mechanical Engineering, Shri Shankarprasad Agnihotri College of Engineering, R. T. M. Nagpur University, Wardha, Maharashtra, India

[4]Certified Energy Auditor, Bureau of Energy Efficiency (BEE), Pune, Maharashtra, India

[5]Department of Mechanical Engineering, Annasaheb Dange College of Engineering and Technology, Shivaji University, Ashta, Maharashtra, India

[6]Department of Mechanical Engineering, Government College of Engineering, Patan, Gujarat, India

[7]National Solar Mission, Ministry of New and Renewable Energy, New Delhi, India

[8]Department of Mechanical Engineering, Universiti Teknologi PETRONAS, Bandar Seri Iskandar, Perak Darul Ridzuan, Malaysia

CONTENTS

Abstract—This research article discusses the active pitching technique for the H-Type Darrieus turbine and its importance for the turbine's self-starting and enhanced power coefficient. The pitch of the turbine blades is changed at various points while the turbine is whirling using the servomotor pitching control system. The performance of the turbine is enhanced by the present blade pitching method. The current analytical analysis made use of the DMST (Double Multiple Stream Tube) model. Parametric study is done to create a turbine design suitable for pre-fabrication. Currently, a turbine with a servomotor is being employed in the research. The paper's conclusion is that the current pitching schedule can increase initial torque to initiate starting of the turbine and improve efficiency of turbine in terms of power coefficient up to 45% for operating tip speed ratio, 2.5 at wind velocity of 10 m/s.

Keywords: Servomotor pitching control mechanism, Darrieus turbine, DMST model, efficiency of turbine, speed range of turbine
Received 24 April 2023; accepted 16 July 2023
Address correspondence to Hitesh Panchal, Department of Mechanical Engineering, Government College of Engineering, Patan, Gujarat, 384265, India. E-mail: engineerhitesh2000@gmail.com
#Department of Mechanical Engineering, Walchand Engineering College, Sangli, Maharashtra, India 416415.

INTRODUCTION

The first windmill known to man was constructed in Iran and Afghanistan between the 7th and 10th centuries for the purpose of raising water and grinding wheat. In the nineteenth century, the Savonius and Darrieus VAWTs were constructed to use wind energy to produce electricity. In the year 900 AD, the Persians constructed the first windmill.

Design of Sewerage System by Dynamic Programming an Optimization Technique

[1]Nagoshe, S. R., [2] Kothare,C. B., [3]Kalamkar,S. G. and [4]Zambre,S. A.
[1]Assistant Professor, Shri Shankar Prasad Agnihotri College of Engineering,Wardha, MS,India,
[2]Associate Professor, Shri Shankar Prasad Agnihotri College of Engineering,Wardha, MS,India,
[3]Assistant Professor, Yashwantrao Chavan College of Engineering,Nagpur, MS,India,
[4]Assistant Professor, Shri Shankar Prasad Agnihotri College of Engineering,Wardha MS,India,

Abstract: The infrastructure that uses sewers to transport sewage or surface runoff is known as the sewerage system. It contains components of sewer system, such as receiving screen-drains, manhole types, pump system, surface- overflows. Sewerage terminates at the point of release into the environment or at the sewage treatment centre. The system of sewer appurtenances like chambers, pipes, manholes, etc. that transfer sewage and surface water from the source to the place of discharge.

Majority of the cost of sewerage networks is made up of pipe cost and the excavation cost for sewer trenches. When designing a sewerage network, lowering the cost of excavations and pipes frequently leads to competing goals. In order to transfer wastewater without exceeding predetermined hydraulic constraints It is essential to select the proper pipe diameter and slope combination for each link when designing an actual sewerage system. A trial-and-error process is used to design a sewerage network. Engineering decisions cannot result in a sewerage network that is designed cost-effectively, which will result in large savings. The optimal solution for the design of sewerage networks using dynamic programming techniques is presented in this paper.

Keywords: Sewer, Sewerage networks, Design, Optimization, Dynamic programming.

I. INTRODUCTION

Sewers are an important part of society's infrastructure due to the safe diversion of water used in both private and public life. Before carrying them to effluent treatment plant or another disposal location, sewers collect waste water and unclean sewage. To evacuate all sewage from the homes effectively and efficiently up until the point of disposal, the sewerage system must be correctly and expertly planned and developed. To prevent sewer overflows, property damage, and health risks, the sewers must be of a suitable capacity. The sewer pipe should be designed to be laid on a slope that will provide appropriate slope velocity in order to provide economically adequate sized sewers.

The sewer discharge must first be determined as accurately as possible. The flow velocity shouldn't be either too low to produce deposits in the sewage line or too high to require substantial excavation and high lift for pumping.A sewer network is consist of sewer and sewer accessories such as receiving screen-drains,manhole types, pump system, surface- overflows etc. In such a hypothetical network, wastewater is discharged into the nodes (man holes), and then it travels through a network of linkages to a disposal node.The availability and cost of property, the proximity of disposal facilities, terrain of the area etc. are taken into consideration while choosing the site of the system outlet or sink.

When designing an actual sewerage system, it is important to choose the correct pipe diameter and slope for each connection so that the wastewater may be transported without violating specified hydraulic limitations. A trial-and-error process is involved in sewerage network design. The traditional design method takes a long time involves trial anderror in order to reduce the cost of sewerage networks. In comparison to conventional design, and the proposed design method is a systematic and iterative search technique with avery high probability of arriving at the ideal design.This study presents the best design for a sewerage network using dynamic programming.

II. COST VARIABLES

To design a sewer network it is important to describe the variables of cost. A sewage network link has inverts d1 and d2, a trench- width :w, a sewer diameter: D, and length: L. The total cost of the sewerage network includes the cost of sewer pipes, sewer trench excavation, and manholes.

A sewer pipe's cost C_m can be calculated as follows:

$$C_m = k_m L D^m \quad (1)$$

Where, k_m and m are the pipe dependant cost factors.

The cost of excavation of sewer trench is equal to the cost of earthwork, shoring and sheeting. Considering parallel sides right angle to base, the total cost of earthwork of the link C_e calculated as follows:

$$C_e = k_e L(d_1 + d_2) \quad (2)$$

Materials Today: Proceedings xxx (xxxx) xxx

Contents lists available at ScienceDirect

Materials Today: Proceedings

journal homepage: www.elsevier.com/locate/matpr

Experimental investigation of *N*-Butanol as a fuel additive for Spark Ignition (S.I.) Engine

Chandrakant Kothare [a], Chandrakishor Ladekar [b,*], Suhas Kongre [c]

[a] Department of Mechanical Engineering, Agnihotri School of Engineering, Wardha, India
[b] Department of Mechanical Engineering, Pimpri Chinchwad College of Engineering, Nigdi, Pune, India
[c] Department of Mechanical Engineering, Acharya Shree Mannanarayan Polytechnic, Wardha, India

ARTICLE INFO

Article history:
Available online xxxx

Keywords:
Experimental Investigation
N-Butanol
Fuel additives
SI Engine

ABSTRACT

More progress in the transport industry, rapid growth in the industrial sector & growing population increase our daily fuel demands. Also, fossil fuel stocks are limited. Pollution due to various emissions, the rise in the prices of fuels & health issues attracts the researcher to find alternate fuels or fuel additives. Blending ethanol up to 10 % in gasoline is implemented to reduce pollution. To minimize pollution, more % of ethanol blending is permitted, E-15(15 % ethanol and 85 % gasoline) reported low brake thermal efficiency (BTE) due to its low calorific value. Also, ethanol's affinity toward water creates phase separation problems in fuel tanks. A simple fermentation process prepares butanol and ethanol. Butanol has a higher calorific value. It does not cause phase separation when mixed with gasoline and comes in contact with moisture. Literature reported possibilities that *n*-butanol could be a good fuel additive in gasoline; hence in this research work, the suitability of *n*-butanol as an additive for fuel is tested at different compression ratios (C.R.). The experimentation was carried out on a computerized single-cylinder 4S (Stroke) variable compression ratio S.I. engine at a constant speed of about 2800 rpm and tested various performance and emissions parameters. E10Bu1.5(Ethanol 10 % and Butanol 1.5 %) reported the highest BTE and lowest BSFC compared to Ethanol without additives, i.e., E0 and E10. *N*-butanol was tested as a fuel additive with butanol with varying percentages and found E10Bu1.5 give optimum performance and emission. The percentage increment in BTE of E10Bu1.5 for different C.R. compared to E0 is 10.83 to 20.34 %, and E10 is 0.16 to 1.07 %. The percentage decrement in BSFC of E10Bu1.5 for different C.R. compared to E0 is in the range of 11.33–16.80 %, and E10 is 0.26 to 0.88 %.

Selection and peer-review under responsibility of the scientific committee of the International Conference on "Innovations in Mechanical and Civil Engineering".

1. Introduction

Several researchers examined ethanol and evaluated Spark Ignition (S.I.) engine characteristics. Increasing the ethanol percentage in the gasoline improves BTE and decreases BSFC. This attribute of ethanol's higher percentage of oxygen improves combustion, and carbon monoxide (CO) emissions decrease, but carbon dioxide (CO_2) emissions increase [1]. Alcohol has been used in engines for a long as fuel. Ethanol is one of the most extensively used fuels or fuel additives in the alcohol family. The most beneficial aspect of ethanol is its high research octane number (RON), due to which the engine runs at a high compression ratio (C.R.) and a high percentage of oxygen, which helps complete combustion. Researchers have also found that a 10 % ethanol-gasoline blend is suitable for existing S.I. engines [2]. Introduce direct ethanol injection combined with gasoline port injection as a revolutionary technology that makes ethanol fuel in S.I. engines more effective and efficient. Compared to gasoline, higher latent heat of vaporization is advantageous, which boosts the charge cooling effect; as a result, increasing the compression ratio improves BTE [3]. Ethanol, undoubtedly, has some unique fuel properties that make it an excellent fuel blender for S.I. engines (see Table 1).

However, some properties/problems, such as cold start problems, hygroscopic nature of ethanol, rust problem, and high latent

Abbreviations: rpm, Revolutions Per Minute; CFD, Computational Fluid Dynamics; ppm, Parts Per Million; EGT, Exhaust Gas Temperature.

* Corresponding author.
E-mail address: chandrakishor.ladekar@pccoepune.org (C. Ladekar).

https://doi.org/10.1016/j.matpr.2022.12.064
2214-7853/
Selection and peer-review under responsibility of the scientific committee of the International Conference on "Innovations in Mechanical and Civil Engineering.

Shekhar Thakre, Amar Pandhare, Prateek D. Malwe*, Naveen Gupta, Chandrakant Kothare, Pramod B. Magade, Anand Patel, Radhey Shyam Meena, Ibham Veza, Natrayan L. and Hitesh Panchal

Heat transfer and pressure drop analysis of a microchannel heat sink using nanofluids for energy applications

https://doi.org/10.1515/kern-2023-0034
Received May 6, 2023; published online September 5, 2023

Abstract: The present research aims to enhance heat transfer in straight and wavy profile heat sinks using the same length and hydraulic diameter with different microchannel geometries (triangular, rectangular, trapezoidal, semi-circular, and circular) for uses in electronics, inkjet printing, high heat flux cooling of lasers, and other domains. The nanofluid employed is water/aluminum oxide (water/Al_2O_3), and the flow regime is laminar. The range of Reynolds number (Re) in this study was $220 \leq Re \leq 550$, and the concentrations of nanoparticle Al_2O_3 with Heavy Water ($2H_2O$) were 1.2 % volume. This investigation uses 3-dimensional Computational Fluid Dynamics (CFD) simulation software to investigate the heat transfer characteristics of several cross-sectioned microchannels. The numerical investigation utilizes the finite volume approach, and the CFD analysis is validated with accessible literature with different wavy profiles. According to the CFD simulation results, the microchannel with a circular cross-section has the highest heat transfer performance (up to 18 %) among the other cross-sections. The circular cross-section microchannel seemed to have the most significant increase in coolant temperature (by 9–22 %). The analysis outcomes prove that the microchannel with a circular cross-section has the highest performance for heat transfer; the triangular channel has the lowest performance under the same geometric parameters and boundary conditions. So, it is suggested that a circular microchannel can be used for a heat-carrying capacity of 150 W/cm^2, a hydraulic diameter of 500 µm, and a Reynolds number equal to 500.

Keywords: Computational Fluid Dynamics; heat carrying capacity; heat sinks; heat transfer; hydraulic diameter; microchannel geometries; nanofluid

***Corresponding author: Prateek D. Malwe**, Department of Mechanical Engineering, Walchand College of Engineering, 416415, Sangli, Maharashtra, India; and Department of Mechanical Engineering, Dr. D. Y. Patil Institute of Technology, Pimpri, 411014, Pune, Maharashtra, India, E-mail: prateek0519@gmail.com. https://orcid.org/0000-0003-4576-9318
Shekhar Thakre and Amar Pandhare, Department of Mechanical Engineering, Sinhgad College of Engineering, Vadgaon Bk., 411041, Pune, Maharashtra, India
Naveen Gupta, Department of Mechanical Engineering, GLA University, Mathura, India
Chandrakant Kothare, Department of Mechanical Engineering, Shri Shankar Prasad Agnihotri College of Engineering, Wardha, Maharashtra, India
Pramod B. Magade, Department of Mechanical Engineering, Zeal College of Engineering & Research, 411041, Pune, Maharashtra, India
Anand Patel, Department of Mechanical Engineering, University of North Texas, 76207, Denton, TX, USA
Radhey Shyam Meena, Scientist, Ministry of New and Renewable Energy, New Delhi, India
Ibham Veza, Department of Mechanical Engineering, Universiti Teknologi PETRONAS, 32610 Bandar Seri Iskandar, Perak Darul, Ridzuan, Malaysia
Natrayan L., Department of Mechanical Engineering, Saveetha School of Engineering, SIMATS, 602107, Chennai, Tamil Nadu, India
Hitesh Panchal, Mechanical Engineering Department, Government Engineering College Patan, Patan, Gujarat, India. https://orcid.org/0000-0002-3787-9712

1 Introduction

Different electronic devices, such as high-power integrated circuits, projectors, light emitting diodes, supercomputers, semiconductors, lasers, microprocessors, and applications like air separation devices, as well as industries like cryogenic, produce a lot of heat energy when they work for a long time, and it can be damaged if the temperature rises above a critical value. Effective cooling is critical for extending the life of components (Panchal et al. 2019). It is critical to make use of the microchannel heat sink. The microchannel function is handy when the performance of electronic components is critical, as a rise in chip surface temperature causes 55 % of electronic component failure. The use of microchannel in tiny thermal devices and microchannel heat sinks has elevated the scientific theory of heat transfer to a new level, and researchers in the fields of electronic device cooling (Chu et al. 2023). The heat flux density in the micro-component system is quite high due to the microelectronics industry's rapid development. Therefore, it has become necessary to find a solution to design

International Journal of Power and Energy Systems, Vol. 43, No. 10, 2023
An Open Access Paper

CFD ANALYSIS OF 210 MW BOILER'S ECONOMISER FOR DETECTING AREA AND CAUSES OF TUBE FAILURE

Chandrakishor L. Ladekar,* Manoj R. Dahake,** Chandrakant B. Kothare,*** and Ajay V. Kolhe****

Abstract

The forced outages in the thermal power plants are due to boiler tube leakage (BTL) as they run at full load, which affects the power plant's performance. The areawise and causewise boiler tube failure data analysis showed more percentage failure in the finned tube economiser due to erosion and overheating of the tubes. Computational fluid dynamics (CFD) modelling can be applied in the power plant economiser. This work focuses on CFD analysis of a finned tube economiser to see velocity, temperature, and pressure at various places in the economiser. A comparison of simulated velocity with cold air velocity test data showed that actual velocity along the water wall is approximately 10–20% more than measured by simulation. Further investigation in close view shows that the tube failure occurs at U-bends due to ash particles' high velocity and temperature. The low temperatures at the corners of the attached fin resulted in the welded corner's failure, further validated through the tube failure data. A low temperature on the downside leads to pitting damages. Pressure variations show the low pressure on the downside of the tube, resulting in the un-uniform pressure of the fluid particles in close vicinity to the tubes of the economiser and a reduction in the heat transferring area. Redesigning the fin structure over the tube is suggested to eliminate this problem. High static temperature and velocity were observed near the walls. This helps to identify the location and magnitude of the temperature and velocity for further modification. The modification in terms of re-designing the fins over the tube, placement of the baffles in the flow passage, and introduction of the mixing chamber and blowers were suggested based on the study. The impact of the flue gases can be predicted using the advanced technique of life-placing baffles, which will expect the tube life based on the simulation model and can reduce the cost of experimentation.

* Pimpri Chinchwad CoE (PCCoE) Pune & S. P., Pune University, Pune, India; e-mail: chandrakishor.ladekar@pccoepune.org
** AISSMS CoE, Pune & S. P., Pune University, Pune, India; e-mail: mnjdahake@gmail.com
*** Shree Shankarprasad Agnihotri College of Engineering, Wardha, India; e-mail: chandrakant.kothare@rediffmail.com
**** Kavikulguru Institute of Technology and Science (KITS), Ramtek, India; e-mail: ajay.kolhe4@gmail.com
Corresponding author: Chandrakishor L. Ladekar

Recommended by Jen-Hao Teng
(DOI: 10.2316/J.2023.203-0484)

Key Words

Flow analysis, CFD analysis, boiler economiser, erosion failure, boiler tube leakage

1. Introduction

In many developing countries like India, coal is the primary fuel for power production. As per the report by India's coal ministry, it accounts for 55% of the country's energy needs [1]. As per the Central Electricity Authority (CEA) report in June 2022, coal-based power plants produced 204.8 Giga Watt (GW) of power, contributing 50.7% out of 437.6 GW total generations [2].

The assessment of the performance of India's thermal power plants for 2016–17 was prompted by data showing that the percentage of a generation lost due to forced outages (FO) rose to 24.52% in that year from 21.91% the year before. A rise in reserve shutdown (RSD) and coal/transmission restrictions have led to more FO. In addition, India's plant load factor (PLF) for its thermal power units fell to 59.06% in 2016–17, down from the 61.06% recorded the year before. RSD caused an increase in generation loss, contributing significantly to the decrease in PLF. Tube leakages constitute a significant cause of FO in power plants in developing nations. Tube leaking is a complex problem with a variety of reasons and solutions. Fuel efficiency and power output may be improved by looking into the causes of tube leakage and fixing them [2]. Table 1 shows the year-by-year area/cause of FO and energy loss (EL) occurrence for 143 units of 210 MW.

This work was carried out to solve the force outage problem of Maharashtra State Power Generation Company (MSPGCL) as part of the boiler tube leakage (BTL) project. Particularly, the data of Bhusawal Thermal Power Station (BTPS) 2 units of 210 MW was used for the study. To find the significant area and cause of BTL, data of the causewise and areawise BTL failure instances of MSPGCL in all 210 MW units are used to focus on the particular area. They are given in Tables 2 and 3, respectively.

Causewise and areawise failure trends in 2 units of a 210 MW Power Plant at BTPS were studied and analysed for 3 years performance. Causewise, failure data shows

Implementation of Code Cleanup and Code Standard Refactoring with PMD and UCD Tool

Ganesh B. Regulwar[1(✉)], V. M. Thakare[2], and R. M. Tugnayat[3]

[1] SGB Amaravati University, Amaravati, Maharashtra, India
ganeshregulwar@gmail.com
[2] CSE PG Dept, SGB Amaravati University, Amaravati, Maharashtra, India
[3] SSPA College of Engineering, Wardha, Maharashtra, India
tugnayatrm@rediffmail.com

Abstract. Software refactoring is the procedure that requires alteration in the source code to keep away from unused variable or duplicated variable, unused method and deprecated method. In this paper, work is done for implementation of CCACSR with PMD and UCD tool, which is useful for software refactoring. This paper focuses on CCACSR that includes mainly three modules, first to detect and then remove unused or duplicate variable from source code, second to detect and then remove or comment unused method from source code and third module is to find out the method which will be replaced by its equivalent new method of source code, so that method can be changed but its external behavior should not be changed. Other than this a comparison of developed system result with PMD and UCD tools is also performed. For this a program of 15–430 lines of code is developed. This code is checked with available platform and found results very effective. And same code is checked with PMD and UCD tools. Finally, the comparison of the results is performed with these tools. The detection of cloned variable or unused variable can be done by the concept of method and classes of AST parser and JAVA parser of eclipse from the existing source code, after removing the cloned or unused variable from source code and save the associated information in file for further used purpose. Similarly to detect the unused method from existing source code prepared by the concept of method and classes of AST parser and JAVA parser of eclipse and store related file after comment or removing particular method from source code. For Refactoring swing API is used, which is to find out the old method of older version and will be replaced by new method of newer version of Java. We compare our IDE CCACSR with PMD&UC Detector, which detects only unnecessary code but in our IDE and we determine as well as remove it from Java source file.

Keywords: Cloned variable · Unused method · Deprecated method · CCACSR · AST · Parser

A. Kumar et al. (eds.), *ICDSMLA 2019*, Lecture Notes in Electrical Engineering 601,
https://doi.org/10.1007/978-981-15-1420-3_48

IJCSE International Journal of Computer Sciences and Engineering Open Access
Research Paper Vol.-7, Issue-6, June 2019 E-ISSN: 2347-2693

Frame Tone and Sentiment Analysis

S.V. Balshetwar[1*], R.M. Tuganayat [2], G.B. Regulwar[3]

[1]Dept of CSE, Satara College of Engineering and Management, Shivaji University, Kolhapur, India
[2]Shri Shankarprasad Agnihotri College of Engineering, Wardha Sant Gadge Baba Amravati University, Amravati India
[3]Dept, PLITMS, Buldana, Maharashtra, India

Corresponding Author: balshetwar.satara@gmail.com, Tel.: 9881697956

DOI: https://doi.org/10.26438/ijcse/v7i6.2440 | Available online at: www.ijcseonline.org

Accepted: 16/Jun/2019, Published: 30/Jun/2019

Abstract— Electronic text on internet can be used for many online activities similarly it can also be used for social movement activities. The electronic text through social movements can also be used to describe an issue, place blame, identify victims, propose a solution and appeal readers to take action on it. Texts such as these are framing documents. Framing is a unique concept in sociology & political science in which people interpret information and speak in favour or claim. Online communities are using frames on social media for their good or bad goals. Thus framing and contents in it have cumulative effect on sentiment of people which needs to be studied. Sentiment analysis explores attitudes, feelings, and expressed opinions regarding products, topics, or issues. The research presented here proposes a framework that applies statistical methods in text analytics to extend research in framing process to find sentiments expressed by people in frame.
In research work, first phase is to pre-process text; it uses supervised machine learning methods that create a tone based term matrix. Second phase discover distinct patterns that characterize prominent frames by classifying the corpus into frames and non-frames. last phase aims to classify frames more specific into motivational, investigative and predictive on the basis of sentiments expressed in them so as to find out threat, cause or solution for an issue. The research presented here aims to develop a tool that will help social movement organizations and concerned authorities to portray issue and helps in organizing activities properly.

Keywords— Sentiment, Tone, Frame, Context- Concept Quadruple.

I. INTRODUCTION

In this world of information technology the ever growing thing is data, it can be set of facts, observations anything in the form of digitized manner. Now a day the data has been in trillion gigabytes. Every part of this technological world is flooded of data today. Almost 80% of this data is unstructured; because the data comes from various new sources like device logs, server logs, twitter feeds, chat data, blogs, web pages, emails, and social media content. This makes a huge collection of text data which is created by humans to express themselves to others, so it has become an important source of data that may contain valuable information.

Every person making use of social media has abundant of data on internet, companies make use of this data to analyze many things right from sentiments of people in purchasing a product to fraud detection or technically for securing the companies data, this data is also used to drive social movements.

Social movements occur when caucus of people stand against injustice or issue which has a socio political background. Similar to but distinct from terrorism but can be named as intruder/extruder terrorism. It is nowadays used widely to mobilize people using social media. Online communities are using social media to raise complex societal issues for political goals or to really put forward social issues like public health and climate change, which is catching attention of researcher and media. Social movements play an important role in bringing changes in society in political, educational, health and other areas. Collective actions and emotions of people are portrayed through them.

Suppression of peoples demand through authorities or their agents using violence or other measures is the main reason to raise a social movement. Social movements are redemptive, resistance or revolutionary. Redemptive movements are religious and are total personal transformation, resistance movements are those which are used against legal bodies to disrupt civil order and stability