Two faculty members of the University of the Philippines Cebu will be presenting their faculty grant research outputs on 18 February 2015 at 1:30 p.m.

The presenters and their research topics are Prof. Nelia Ereno on *Digital Approach Model: A Neomillennial Pedagogy Framework* and Prof. Kaira Zoe Alburo-Cafiete on *Adaptive Social Protection: A Proposed Framework for Integrating Human Trafficking Prevention in Disaster Risk Reduction and Management*.

The research presentation will be at the UP Cebu Union Building, Gorordo Avenue, Lahug, Cebu City.
Assessment of the water quality of Buhisan, Bulacao and Lahug River, Cebu, Philippines using fecal and total coliform as indicators

An ISI Publication of Prof. Eukene Bensig,
Dr. Mary Joyce Flores, and Prof. Fleurdeliz Maglangit

Abstract

This study was conducted to evaluate and compare the water quality of Buhisan, Bulacao and Lahug rivers in Cebu, Philippines using coliforms as indicators. Monthly sampling started from November 2011 to April 2012 in the upstream, midstream and downstream stations. The multiple tube fermentation technique was used for the analysis of coli forms. High total and fecal coli form counts were observed in the three rivers from February to April, but the difference in values across time was not significant. Fecal coli form counts of Buhisan and Bulacao rivers differed significantly across sampling stations. This was most likely due to the low fecal coli form (FC) values in the upstream compared with the midstream and downstream. The generally high FC and TC levels throughout the sampling period confirmed the presence of fecal pollution in the rivers. Organic pollution and the presence of coli forms could be related to the accumulation of waste water due to high impact human activities across the river networks. It is therefore recommended to conduct an inventory and monitor non-point sources of water pollution, establish waste water treatment measures and enforce policies for river protection.

This paper was published in the Current World Environment 9 (3): 1-7.

Fecal and total coliform levels of Buhisan River, Cebu City, Philippines

An ISI Publication of Prof. Eukene Bensig, Dr. Mary Joyce Flores, and Prof. Fleurdeliz Maglangit

Abstract

Total coliform bacteria are a collection of relatively harmless microorganisms commonly found in the gut of warm and cold blooded organisms. Part of this collection is the fecal coliform which origin may come only from warm blooded animals and is highly differentiated by their ability to grow at elevated temperatures. The water quality of Buhisan River in Cebu City was evaluated using coliforms (total coliform and fecal coliform) as indicators, in relation with physicochemical parameters such as biological oxygen demand (BOD), conductivity, dissolved oxygen (DO), nitrate, pH, phosphate, salinity, temperature, total dissolved solids (TDS) and total suspended solids (TSS). Sampling was done once a month from November 2011 to April 2012 in three established stations covering the upstream, midstream and downstream. The multiple tube fermentation technique was used for the analysis of coliforms. On a spatial scale, FC values differed significantly (p=0.043) which increased from the upstream towards the lower reaches of the river especially in the months of January and February, however, the difference in values across time was not significant. This imply that there was continuous fecal pollution in the river. Statistically, no significant correlations were noted between coliforms and the physicochemical factors. A negative relationship was observed among coliforms with DO and nitrate (p>0.05). These results suggest the presence of sewage and organic pollution in the river, which could be attributed to the lack wastewater treatment facilities for domestic and industrial discharges across the river system.

This paper was published in the International Journal of Research in Environmental Science and Technology 4 (2): 76-82.
Abstract
The present study deals with the physico-chemical analysis of water samples collected monthly from three established sites in Lahug River for a period of six months. The main purpose of the study is to provide baseline data on its physico-chemical characteristics as well as assess its water quality. Statistical tools were used to analyze and interpret the data. The pH, temperature, TDS, DO, nitrates and total P varied significantly (p<0.05) across location. The pH values varied from 7.2 to 7.7 are suitable for the largest variety of aquatic organisms. Water temperature, total suspended solids (TSS), total dissolved solids (TDS) and levels of nitrates were within the permissible DENR guidelines for Class D surface waters. However, the levels of dissolved oxygen (DO), biochemical oxygen demand (BOD) and total P did not comply with the DENR Class D standard for surface waters. Rapid oxygen depletion and high phosphorus content as it traversed downstream indicated that the river is polluted. Major sources of pollution were found to be anthropogenic activities such as indiscriminate dumping of refuse, disposal of waste water from laundry and piggery, and waterflow from backyard gardening which uses pesticides or fertilizers. Proper disposal of wastes, establishment of waste water treatment measures, education and public environmental awareness should be done at the community level to reduce the level of pollution in Lahug River.

This paper was published in IAMURE Journal of Ecology and Conservation 10 (1).

Oil degrading and heterotrophic bacteria composition in the oil-spilled affected mangrove forest sediment in Mactan Island, Central Philippines
Abstract
Oil spill increases the amount of hydrocarbons in marine ecosystems that disrupts the ecological balance with severe economic consequences. This study was conducted to assess the microbial composition in the sediments of oil affected areas in Mactan Island, Cebu eight months after the incident. Four sites designated as S1 (low), S2 (mid) and S3 (high) representing oil spill contamination gradient were established. A reference site (Ref) was selected. Sediment samples from each site were collected for microbial count enumeration (heterotrophic and oil degrading bacteria) using the spread plate technique and the MPN method respectively. An increasing pattern of heterotrophic bacteria and decreasing trend of oil degrading bacteria counts were observed along S1, S2 and S3. Results revealed the heterotrophic bacteria count in all sites did not vary significantly. In addition, Ref exhibited highest and lowest count for heterotrophic and oil degrading bacteria respectively whereas S3 and S2 displayed highest in density for the oil degrading bacteria. The proliferation of oil degrading microbe implies the possible presence of oil residues including those PAH components that gets more toxic through time.

This paper was published in the International Journal of Biosciences 5 (8): 141-146.
Physicochemical assessment of the Water Quality of Buhisan River, Cebu, Philippines
An ISI Publication of Prof. Fleurdeliz Maglangit, Dr. Ritchelita Galapate and Prof. Eukene Bensig

Abstract

This study was carried out to assess and provide baseline data on the water quality of Buhisan River, Cebu, Philippines. Water samples were taken in the upstream, midstream and downstream sites of Buhisan River once a month from November 2011 to April 2012. The parameters measured on-site were temperature, pH and total dissolved solids (TDS). Laboratory analyses of total suspended solids (TSS), dissolved oxygen (DO), biochemical oxygen demand (BOD5), nitrates and total phosphorus were carried out according to APHA methods. Results of the study showed that mean midstream and downstream DO and BOD levels did not comply with the standard for Class D surface waters set by the Department of Environmental and Natural Resources (DENR). All measured parameters except for temperature vary significantly across location (p<0.05). The levels of BOD and DO in the midstream and downstream sites exceeded the DENR limit which is suggestive of organic pollutants from domestic sources and urban runoffs from surrounding areas. The water quality of Buhisan River must be regularly monitored to appropriate mitigating measures for the protection and preservation of this freshwater resource.

This paper was published in the International Journal of Research in Environmental Science and Technology 4(2): 83-87.

Water quality assessment of Bulacao River, Cebu, Philippines using fecal and total coliform as indicators
An ISI Publication of Prof. Eukene Bensig, Dr. Mary Joyce Flores, and Prof. Fleurdeliz Maglangit

Abstract

Coliform bacteria have been used to evaluate the general quality of water. These bacteria can be found in the gut of both warm and cold-blooded organisms. Fecal coliform is a subset of this group. They have been characterized to grow at elevated temperatures and specifically associated with the fecal material of warm-blooded animals. Bulacao River was evaluated using coliforms (total coliform and fecal coliform) as indicators, in relation with physicochemical parameters such as biological oxygen demand (BOD), conductivity, dissolved oxygen (DO), nitrate, ph, phosphate, salinity, temperature, total dissolved solids (TDS) and total suspended solids (TSS). Monthly sampling was conducted from November 2011 to April 2012 in the upstream, midstream and downstream sections of the river. The multiple tube fermentation technique was used for the analysis of coliforms. FC values showed significant spatial variation (p=0.004) which could be ascribed to a lower level of biological pollutants in the upstream however, the difference in values across time was not significant. This implies that the river water was severely polluted at the time of sampling. The coliform bacteria did not show significant correlations (p > 0.05) with the physicochemical factors. A negative relationship was noted between coliforms with pH, DO and nitrate. This could be ascribed to the presence of organic pollutants coming from domestic and industrial discharges.

This paper was published in the Journal of Biodiversity and Environmental Sciences 5(2): 470-475.
Community Structure Detection and Analysis in Disaster Related Tweet

A Publication of Prof. Kurt Junshean Espinosa with Harriet Angelie Gonzales

Abstract

One of the considered principal disasters that hit the Philippines almost a year round is flooding. At the occurrence of such floods, social media—Twitter for instance—serve as communication outlet between users rendering them significant in information gathering and dissemination. This study aims to determine the significance of social networks when it comes to disaster information by analyzing community structure formed from different graph relationship and comparing it to actual patterns of flood affected areas of the same timeframe. This paper analyzes the properties of the community structure detected among the nodes in a social network graph formed among Filipino Twitter users who tweeted about flood. Interaction relationship graph was created wherein an edge is formed between two users if se A mentions user B. Seventy-seven communities with more than ten nodes were detected. However, nodes belonging in the same community did not show similarities with each other.

This paper was published in the Philippine Computing Journal 9 (1): 11-16.

Disaster-Related Tweet Classification Using Support Vector Machines

A Publication of Prof. Kurt Junshean Espinosa with Lemuel John Beduya

Abstract

The Philippines is a hoy bed of disasters: earthquakes, flooding, and fires often occur in the country. Moreover, in this part of the globe, majority of the populace are very attuned to social media with almost everyone who are either Twitter or Facebook users. This study took advantage of that and used Twitter in identifying the disaster-related participant tweets by Filipino users in the Philippines. This study will aid the Philippine government and other concerned organizations in their disaster management plans. In view of this, a multi-level binary classification on tweets was implemented using SVM. Specifically, the first level identified a tweet if it is a disaster-related participant tweet or not. The next level identified the type of disaster the participant is experiencing which can be flood, earthquakes or others (fires, landslides, etc). In order to yield the best model for each data set. A 10-fold cross-validation was performed. The process yielded a model for each data set with an F1 score of 0.73, 0.83 and 0.72 for disaster-related, flood-related and earthquake-related participant tweets respectively. The results of the study showed that it is indeed possible to identify participant tweets of any type of disaster in Twitter using SVM. Furthermore, this study can be used as a starting point in examining if it is possible to identify the disaster-prone areas in the Philippines using Twitter.

This paper was published in the Philippine Computing Journal 9 (1): 24-33.
Embryotoxicity of Copper and Zinc in Tropical Sea Urchin Tripneustes gratilla
A Publication of Prof. Brisneve Edullantes and Dr. Ritchelita Galapate

Abstract

The study determined the individual toxicity of copper (Cu) and zinc (Zn) in sea urchin Tripneustes gratilla. Bioassay using inhibitions on fertilization, early cleavage, mid cleavage, late cleavage and blastulation as endpoints involved exposure of viable gametes to Cu and Zn for 0.5, 3, 6, 9 and 12 h, respectively. Inhibitions increased significantly with concentration of Cu and Zn. Probit analysis estimated EC50 values for Cu and Zn, respectively, at 32 and 67 μg·L⁻¹ on fertilization; 31 and 93 μg·L⁻¹ on early cleavage; 43 and 61 μg·L⁻¹ on mid cleavage; 42 and 42 μg·L⁻¹ on late cleavage; and 20 and 44 μg·L⁻¹ on blastulation. Results showed that toxicity of Cu is significantly higher (p<0.05) than that of Zn in all developmental stages, except in late cleavage. Also, the inhibitions elicited by Cu showed sensitivity to life stages. This study provided evidence on heavy metal species-sensitive, concentration-dependent and stage-specific inhibitions on embryonic development in T. gratilla to Cu and Zn.

This paper was published in Science Diliman 26(1): 25-40.

Recognition and Analysis of Emotional States as a value of user classification for Intelligent Language Tutoring in Social Networks
A Publication of Prof. Kurt Junshean Espinosa with Christos Troussas and Maria Virvou

Abstract

Social networks are increasingly being considered as a powerful idea for learning. Especially in the area of Intelligent Tutoring Systems, they can produce interactive, adaptive and personalized e-learning systems which can promote the tutoring process by divulging the abilities and weaknesses of each student and by personalizing the communication by user classification. In this paper, the primary idea is the emotion recognition as a value of the user clustering procedure, given that the fact of knowing how people feel about certain topics can be considered very important for the amelioration of the educational process. As a testbed for our research, we have developed a prototype system for recognition of emotional states of Facebook users. Users’ feelings can be positive, negative or neutral. An emotion is often represented in subtle or complex ways in a status. On top of that, data gathered from Facebook often contain a lot of noise. Indeed, the task of automatic emotion recognition in online texts becomes more difficult. For this reason, a probabilistic approach of Rocchio classifier is used so that the educational process is assisted. Conclusively, the conducted experiments confirmed the usefulness of the described approach.

This paper is an international proceeding published in the International Journal of Information Technology and Computer Science 15(2): 40-49.
Characterizing Influence Factors Affecting Emotion Diffusion in Facebook
A Research Presentation of Prof. Kurt Junshean Espinosa

Abstract

Previous studies have claimed that emotion can be transferred from one person to another via social media. As emotion is crucial to one's ability to adjust to the challenges of daily life and affect our relationship with others, this paper aims to characterize the factors influencing the diffusion of emotion in Facebook by using the Independent-Cascade diffusion model describing the diffusion of emotion in Facebook user’s status messages and by using Multi-Regression analysis in analyzing the results of the diffusion model.

This paper was presented in The World Congress on Engineering and Computer Science - International Conference on Machine Learning and Data Analysis (ICMLDA 2014) at San Fransisco, USA, on October 22-24, 2014.

Content Aggregation and Context Curation: Redefining the Future of Online Advertising Through Information Syndication
A Research Presentation of Mr. Gregg Lloren

Abstract

The Internet revolution has gone a long way to become the most efficient venue for exchanges of ideas; and it has not yet reached its full capability. No wonder, a good number of media planners believe that this form of communication is a better alternative for ad placement than the traditional media (i.e. television, radio, print). One of the many benefits of the Internet as an advertising medium is its being interactive, which makes measurable results even more accessible in real time. This character has become so empowering for both consumers and producers that it has enabled the consumers to play an active role in the shaping of a brand; they are no longer a passive recipient of ads. It represents a phenomenon where consumers—consciously or unconsciously, either by intent or accident—are playing the role of producers by shaping their own selves as brands for whatever purpose (i.e. product marketers, social influencer, entertainer, hobbyist, fan).

One of the many indications that everyone in the Internet plays “adman” is the exchange of ideas and gaining followers through information syndication, either as content aggregation or content (context) curation. This sharing of content echoes the threefold purpose of advertising: to inform, to persuade, and to influence. The interplay between content creators (producers) and content consumers has brought online communication—primarily persuasive communication in the form of advertising—towards a highly dynamic evolution of unprecedented scale; thus, making this study relevant in predicting what could be the future scenario of online advertising. This will be done by correlating the relevance of content curation with existing persuasion theories, advertising models, and Internet users’ experience and testimonies.

This paper was presented in the ACMC 2014 International Conference on Media, Communication, Culture, and the Dynamics of Change, at City University of Hong Kong, Kowloon Tong, Hong Kong, on November 13-15, 2014.
Online Translation System for English to Local Language for Intercultural Understanding
A Research Presentation of Prof. Hazel Trapero

Abstract
With the ASEAN Integration’s promise of borderless communities and the Philippines, especially Cebu’s goal to attract more international communities for work and tourism, there is a need for an accessible technology translator of English to local Cebuano language for intercultural understanding. Located in Central Philippines, Cebu has been a destination for international education, ESL programs, tourism, and commerce. Its language, Cebuano, is widely used in the country.

This study designs an open source/free context-driven English to Cebuano language translation system for local and international users. The system was developed using PHP programming language for easy and platform-independent deployment and MySQL for database management. It was piloted to 30 selected students using a piloted-tested survey questionnaire and test cases to evaluate the capability of the online translation system—technical and linguistic aspects. Findings showed that the translation system was rated “Good” by the respondents based on George and Mallery’s rules of thumb. This means that it can translate English texts into Cebuano in a context-driven manner despite the latter’s ambiguity. The study further recommends additional morphological works and the use of object-oriented programming for future studies and development.

This paper was presented during the Chulalongkorn University Language Institute and Thammasat Language Institute International Conference: Colorful ELT for ASEAN Integration at Pullman King Power Hotel, Bangkok, Thailand, on October 16-17, 2014.

Under the Internet Spell: An examination of the moral context and academic culture of Filipino students committing cyber plagiarism
A Research Presentation of Prof. Crina Tañongon and Prof. Lilia Tio

Abstract
This study aimed to find out the features of the Internet that tempted the Filipino students to plagiarize. This also aimed to assess the reasons of the respondents for plagiarizing by examining the academic factors the students were exposed to. Furthermore, the researchers seek to examine the moral context the students have been operating as conditioned by social and academic factors. The study used Marshall McLuhan’s theory on media as extensions of man to explain how the magic of Internet technology can numb the students’ senses making them forget about academic integrity and their lessons on proper citations. Bandura’s social cognitive theory on moral thought and action was also used to explain the moral mechanisms operating in the plagiarism act. Guided by Vygotsky and Piaget’s theories on cognitive development and assimilation, the researchers oriented 73 Research Writing students on academic honesty and note-taking techniques to avoid plagiarism. After the training, 13 students were still caught plagiarizing and then a case study through a one-on-one interview with those caught was then administered. The interview revealed that the features of the Internet being: a.) a one-stop shop for students’ research needs, b.) a convenience store available 24/7, and c.) a help desk responding to students’ needs ASAP enticed the students to just copy and paste texts from the Internet. Another, the academic environment was also seen as conducive to plagiarism as students might have observed teachers as not so bent on reinforcing punishment or not giving clear instructions on what plagiarism is and how to cite properly. Lastly, the students were observed coping with psychosocial mechanisms such as attribution of blame and shifting of responsibility not on themselves but on the academic environment and the Internet.

This paper was presented during the ACMC 2014 International Conference on Media, Communication, Culture, and the Dynamics of Change, City University of Hong Kong, Kowloon Tong, Hong Kong, on November 13-15, 2014.
Mobile Applications in Teaching-Learning Sciences
A Research Presentation of Miss Jeraline Gumalal

Abstract
Given the sudden shift of the Philippine curriculum to meet the global education system and the 21st century skills, there is a need to increase the computer literacy of both the students and the teachers. A baseline data out from students’ attitude towards educational technology is needed to guide teachers on how to appropriate and use learning objects (LO) such as mobile interactive learning objects (MILO) and PowerPoint Presentation Technology (PPT). Using the Approaches in Studying Inventory for Students (ASSIST) the students were identified to have three studying approaches, Deep (DA), Strategic (SA), and Surface Apathetic (SAA). The students were also given LOs to experience after which they were asked to evaluate the LO using a survey tool and through their experiences. The LO preference of the students were determined to be dependent on their learning approach with 24 DA, 10 SA, and 5 SAA students leaning towards PPT and 9 DA students leaning towards MILO. PPT was determined to be very effective at presenting information while MILO was known to be useful in recalling previous knowledge and assessing performance. The students identified that recognizing individuality, being seamlessly guided, keeping appropriate reading levels, and using tools eclectically are points to be considered by teachers in using LO. The appropriateness and the effectiveness of LO depends on the learning individual and how a teacher handpicks an LO for a specific learning experience.

This paper was presented during the DigiTech Conference and Expo at SMX Convention Center, Pasay City, Manila on September 19, 2014.

Philippine Stock Prices and Random Walk
A Research Presentation of Prof. Rhenazo Barte

Abstract
This study tested the random walk hypothesis in the case of Philippine Stock Prices, using more recent daily PSE indexes covering the period January 2003-19 October 2013. Main results, employing visual methods, tests for runs, sequences and reversals, variance ratio and autocorrelations show that the PSEi time series does not follow random walk.

This paper was presented during the Educator’s Forum: Research Presentation & Needs Analysis at the Integrated Review Hall, University of San Carlos Cebu, on July 16, 2014.
Papers Presented (International)


Papers Presented (Local/National)


