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CS 3201N – CS Thesis 1 (Introduction and Thesis Title)

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Parts of CS Thesis 1

1. Title Page
2. Abstract
3. Chapter 1 Introduction
4. Chapter 2 Review of Related Literature
5. Chapter 3 Technical Background
6. Chapter 4 Design and Methodology
7. Bibliography
8. Appendices (Transmittal Letter, Interview Guide, Software Requirements Specifications)
9. Curriculum Vitae



Parts of Chapter 1

- Chapter 1 Introduction
 - 1.1 Rationale of the Study
 - **1.2 Statement of the Problem**
 - 1.2.1 General Objective
 - 1.2.2 Specific Objectives
 - 1.3 Significance of the Study
 - 1.4 Scope and Limitation

1.2 Statement of the Problem

- This section states what the research intends to do.
- This section consists of 2 sub sections:
 - 1.2.1 General Objective
 - 1.2.2 Specific Objectives

1.2.1 General Objective

- This section is a general statement or project aim written in a short statement in the form of a clear, unambiguous sentence describing the overall goal of the project.
- It describes the direction or purpose of the project.
- This general objective is a question or a problem definition within the subject area that the researcher would like to solve.



1.2.1 General Objective Format

Suggested Format:

To design/develop a <type of system> for <purpose> [using
<approach>]



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1.2.1 General Objective Example

- Example 1:
 - This research aims to develop a thyroid wellness system using Support Vector Machine (SVM) based on pathological attributes.
- Example 2:
 - This study aims to provide an empirical analysis of using blockchain technology for e-voting systems based on the performance and security.

1.2.2 Specific Objectives

- The specific objectives are the means on **how to achieve the general objective.**
- The specific objectives are usually presented as a **numbered list of activities** to carry out in order to achieve the general objective.

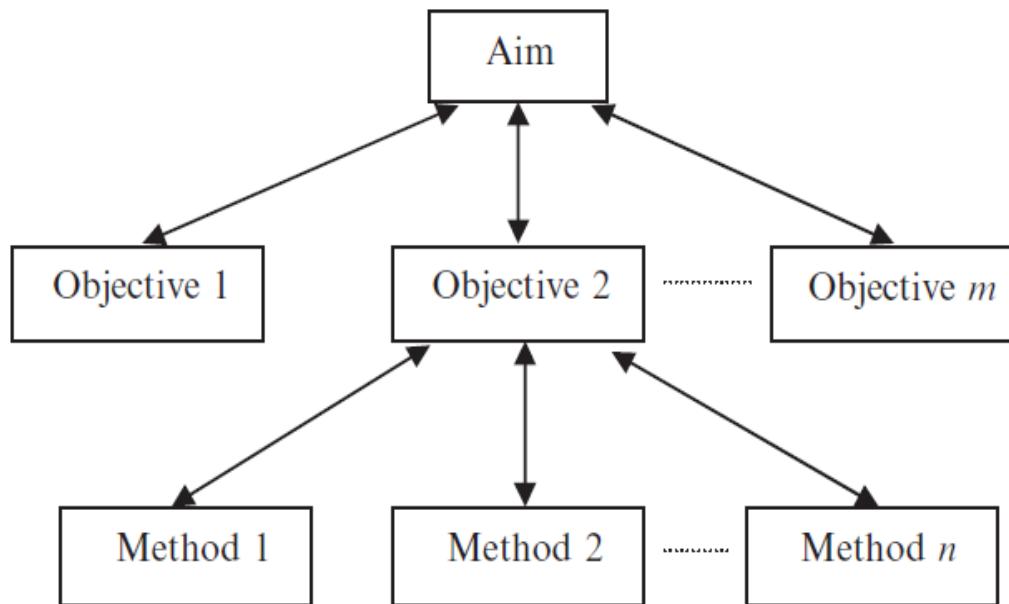
1.2.2 Specific Objectives

- Once you have developed your project aim you can start to **develop specific objectives**, and later also choose a **method** for each specific objective.
- Each objective is a **small, achievable and assessable unit**.
- It is formulated in such a way that fulfilling the objectives leads to the overall aim being satisfied.

1.2.2 Specific Objectives

- This consists of **clear statements** of the intended outcomes, all which can be measured in some way.
- The **SMART (Specific, Measurable, Achievable, Realistic and Time-bound) objectives** should break your research/capstone/design proposal into major stages and **state an output**, which would guide you in planning and negotiating your work with your supervisor.

1.2.2 Specific Objectives



- It depicts the relationship between your aim, objectives and methods.

1.2.2 Specific Objectives

- Once you have **written down** your specific objectives, you can start to **identify potential methods** for each objective.
- Think in terms of: **how can this objective be achieved or solved?**
- When you have **chosen the methods** you intend to use, it can be useful to **summarize** your overall approach.

1.2.2 Specific Objectives

- This serves at least **two important purposes**.
 - First, you will be able to get a **bird's eye view of the methods** you have chosen and see their relationships.
 - Second, you will be able to present **additional details** of how you intend to use these methods in your project.
- Additionally, it will be easier for other people to grasp your approach if you have provided a summary of how you intend to structure your work.

1.2.1 Specific Objectives Example

- Example 1:
 1. Pre-process the data.
 2. Design and develop the SVM model to be used in identifying the presence of and kind of thyroid disease.
 3. Test and determine the accuracy of the model obtained.

1.2.1 Specific Objectives Example

- Example 2:
 1. Gather information and evaluate an e-voting system using blockchain technology.
 2. Design and develop two e-voting systems, the Blockchain-based E-Voting System (BEVS) and the Centralized E-Voting System (CEVS)
 3. Test and evaluate the functionalities of the systems.
 4. Analyze the performance of the systems based on their performance and security.

How to make a Thesis Project Title?

- Long and Descriptive
 - Linear-Time External Multipass Sorting with Approximation Guarantees
- Short and Sweet
 - Approximate External Sort
- Medium length and Cute
 - Floosh: A Linear-Time Algorithm for Approximate External Sort



What are the properties of the title?

- The title needs to be **very specific** in nature (**concise, descriptive enough of the study and accurate**)
- In spite of being specific it should also have the **expressive power** to show the entire research study in those few words. This is the toughest part in selecting a title



What are the properties of the title?

- It should tell the **total nature** of the subject.
- It needs to be **very definite and clear**. Never use words which can create ambiguity in the mind of the readers.
- The title needs to be **attractive, interesting** **catchy enough** to get the attention of the readers.

Sample Thesis Project Title

- Perception Analysis for University of San Carlos (USC) as an Educational Institution using Web Mining and Multinomial Naïve Bayes Algorithm
- Application of Semantic Web Technologies for Learning Pattern of Storm Damages
- Color and Shape Analysis for Imaged-based Detection and Characterization of Skin Lesion
- Automated Heart Enlargement Detection Using Chest X-Ray Image Analysis
- Modifying the K-Medoid Algorithm to Improve Gene Expression Data Clustering Using Biological Homogeneity Index (BHI) and Biological Stability Index (BSI)
- A Web Application for Flood Simulation and Visualization Using the D8 Algorithm
- Emotion Analysis on Philippine Disaster-Related Tweets

Sample Thesis Project Title

SY 2021-2022

- Alab: An RPG Game on the Spanish Colonization Era of Philippine History
- The Development and Assessment of Pattern Matching Algorithms used by Zee: A Filipino Sign Language (FSL) Dictionary and English-Learning App
- A Performance Evaluation of Convolutional and Recurrent Neural Networks on Philippine Typhoon Data
- An Identification and Analysis of Fake News About COVID-19 Vaccines by using Clickbait and a Classification Model
- Reducing Redundancy in Whiteboard Content Extraction of Text and Figures using Image Processing in Noted Generation
- Plant Identification using Xception based on Convolutional Neural Network



Sample Thesis Project Title

SY 2021-2022

- Eco: A Predictive Analysis on E-Sports Using Linear Regression Technique
- Maturity Estimation and Macronutrient Deficiency Identification to Assist the Growth of Lycopersicon Esculentum Mill Using Xception Based Convolutional Neural Network in a Wick Hydroponic System
- Artificial Light Augmentation in Urban Farming Based on RCNN for Determination of Lettuce Light Conditions
- Philippine Banknote Detection and Recognition using Machine Learning with Mobile Application for the Visually Impaired
- An Empirical Analysis of Using Blockchain Technology in E-Voting Systems
- An Analysis on the Awareness of the COVID-19 Precautionary Measures and the Rate of Infections in the Philippines Using Machine Learning

Sample Thesis Project Title

SY 2021-2022

- Machine Learning with Human-in-the-Loop for Predicting International Classification of Diseases (ICD) Codes
- THY SYS: A Preliminary Thyroid Wellness Assessment Through Machine Learning using Pathological Factors
- Sentiment Analysis of Product Reviews as Customer Recommendations in Shopee Philippines using Hybrid Approach
- Maturity Assessment of Lactuca Sativa using Image Processing Based on Morphological Analysis and Convolutional Neural Network
- Online Learning Versus Face to Face Learning: A Sentiment Analysis of USC SAS Students using NLP

Sample Thesis Project Title

SY 2019-2020

- Fire Detection Algorithm Using Pixel Color Analysis



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Sample Thesis Project Title

SY 2018-2019

- Performance Comparison on Various Image Deformations Based on Match Ratings using ORB, BRIEF, SURF, and SIFT
- Fit N: A LSTM Based Cardio Activity Goal Recommender
- Filipinos' Emotions on Government Agencies Using Hybrid Classification
- Sentiment Analysis on the Impact of K-12 Program in the Philippines using Naive Bayes and Lexicon Approach with Code Switching
- Predicting Typhoons in the Philippines Using Radial Basis Function Neural Network
- Image-Based Pest and Disease Recognition of Tomato Plants using a Convolutional Neural Network
- Fire Survivor: A 2D Game for Surviving a Fire Emergency



Sample Thesis Project Title

SY 2018-2019

- Social Media Platforms: Alternative Source of Fire Data in cebu City using SVM and Correlation Analysis
- Hiligaynon Cebuano Sentence Translator using Recurrent Neural Networks
- A Comparative Study on Approaches of Star Generation for Hotel and Restaurant Reviews
- Online News Article Verification using Natural Language Processing and Semantic Analysis Techniques
- Computer Simulation Model for Traffic Enforcement using Unity
- Analysis of the Impact of Social Networking Sites using Web Content Mining and Induction Method



Sample Thesis Project Title

SY 2018-2019

- An Analysis on Academic Deep Web Search Engines through Opinion Mining using Sentiment Analysis
- Empirical Analysis of Massive Open Online Courses (MOOC) Based on User Reviews using Topic Modeling and Sentiment Analysis
- Bias Detection in Philippine Political News Articles using Sentiwordnet and Inverse Reinforcement Model
- An Analysis of DRR Suggestions Assisted by K-Means Clustering
- OCR Mobile Application for Recognizing Text in Degraded Document Images
- An Evaluation of SVM and Naive Bayes with Smote On Sentiment Analysis Data Set
- Modern File Transfer Protocol Using Lossless Compression, Lattice-Based Encryption, and a Data Integrity Hashing Function



Sample Thesis Project Title

SY 2018-2019

- An Evaluation of SVM and Naive Bayes with Smote On Sentiment Analysis Data Set
- Modern File Transfer Protocol Using Lossless Compression, Lattice-Based Encryption, and a Data Integrity Hashing Function
- Poverty Incidence Identification of Cities and Municipalities Using Convolutional Neural Network as Applied to Satellite Imagery
- Classifying Cyberbullying Tweets Using SVM Based on the K-Means Clusters
- Predicting Emotion in Music through Audio Pattern Analysis
- Audio Generation From Piano Sheets Using Convolutional Neural Networks for Musical Notation Identification
- Audioseer: A Music Popularity Prediction System Using Feed Forward Neural Network with BackPropagation



Sample Thesis Project Title

SY 2018-2019

- Vocabulearner: Web-Based E-Learning Mobile Application for Multi-Language Vocabulary Enhancement with Dynamic Difficulty Adjustment
- Hybrid Traffic Signals Using Scats and Pre-Timed Traffic Signal Using Reinforced Learning
- Speaker Diarization System as an Aid for Evaluation of Student Participation in an Academic Classroom
- Developing a Cebuano Parse Tree for a Grammar Correction Tool using Deep Parsing
- Comparative Analysis of Artificial Neural Network Models: Application in Predicting Crop Prices
- A Decision Support System with 3D Visualization for Box Space Optimization Using the Locust-Based Particle Swarm Optimization Algorithm

Sample Thesis Project Title

SY 2018-2019

- An analysis on the insights of the Anti-Vaccine Movement from Social Media Posts using K-Means Clustering Algorithm and the Vader Sentiment Analyzer
- A Recurrent Network Crime Incidence Prediction in Mandaue City using GRU with BackPropagation through Time
- An analysis of Children's Book Reviews from Goodreads using K-Means Algorithm
- Twitter Sarcasm Detection as Contrast of Sentiments
- Automatic Music Mood Recognition using Russell's Two-Dimensional Valence-Arousal Space from Audio and Lyrical Data as Classified using SVM and Naive Bayes



Sample Thesis Project Title

SY 2017-2018

- A Framework for Identifying Excessive Sadness in Students Through Twitter and Facebook in the Philippines
- Automatic Web Page Categorization using Machine Learning and Educational-Based Corpus
- Opinion Mining: Investigating Aspect Trends Surrounding Food Establishments in Cebu
- Filipino and English ClickBait Detection using a Long Short Term Memory Recurrent Neural Network
- Redivivus: A Mobile Application for recognizing Solid Waste Materials through Convolutional Neural Network
- Emotion Classification of Duterte Administration Tweets using Hybrid Approach



Sample Thesis Project Title

SY 2017-2018

- An Environmental Mapping System using Collaborative Computing in a Modified Ant Algorithm
- Mobile Attendance Management System using Face Recognition
- Twitter-Based Suicide Prediction Model using Machine Learning Approach



Sample Thesis Project Title

SY 2016-2017

- Store Navigation in an RFID Environment using Graph Theory and Dijkstra's Algorithm
- Angle-Agnostic Identification of Landmarks in Image for Mobile/Android Devices
- SeeTrue: A Mobile Application for Recognizing Texts in Mages through Optical Character Recognition
- Dengue Incidence Prediction in Cebu City using Artificial Neural Networks
- Campus Navi: A Mobile Device Navigation Tool using Dijstra's Algorithm
- Development of a Distributed System using Dynamic and Cross Platform Computing Unit Volunteers in School Laboratories with the USE of MD5 HAsh Decoding
- Fire Detection and Notification System using Machine Learning
- An Android Based Interactive Tracking and Shortest Path Finding System for Clustered Travelling using Dijkstra's Algorithm

Sample Thesis Project Title

SY 2016-2017

- Real Time Locator and Intelligent Parking System using License Plate Recognition and RFID Based Security
- Driver's Security Risk Assessment using Image Processing Location Based and Inertial Navigation System
- FLUX: A Cloud-Based Navigational System using Frame Differentiation and Traffic Density Detection
- Android-Based Applications For PreSchool Math Learning Through Child-Centered Design and Monitored Gaming
- A Mobile Educational Math Game with Autism-Centred Design fpr Autism Spectrum Disorder with Intellectual Disability



Sample Thesis Project Title

SY 2015-2016

- Real Time Location and Intelligent Parking System Using License Plate Recognition and RFID Based Security
- Fire-Detection and Notification System Using Machine Learning
- Flux: A Cloud-Based Navigational System Using Frame Differentiation and Traffic Density Detection
- An Android Based Interactive Tracking and Shortest Path Finding System for Clustered Travelling Using Dijkstra's Algorithm



Sample Thesis Project Title

SY 2015-2016

- A Mobile Educational Math Game with Autism-Centered Design for Autism Spectrum Disorder with Intellectual Disability
- Android-Based Applications for Preschool Math Learning through Child-Centered Design and Monitored Gaming
- Driver's Security Risk Assessment Using Image Processing Location Based and Inertial Navigation System



Sample Thesis Project Title

SY 2014-2015

- A Serious Game for Training Fire Evacuation on First Year University Students
- The Adventures of Jose An E-Learning Role-Playing Game on the Life of the Philippine National Hero
- Lifecycle: A Motorcycle Accident Detection Application for Android Smartphones
- Image Recognition and Solver for Algebraic Systems of Linear Equations for Android



Sample Thesis Project Title

SY 2013-2014

- Seumas & Ritchie An Adaptive Computer Game For Programming Logic Formulation
- Electronic-Storybook Creator with Cebuano Natural Language Processing-Based Animation for Kindergarten Educators
- An E-Learning Tool Introducing Computational Thinking Methods in Mathematics for Children
- Growth Dynamics Simulation Model Of Escherichia Coli Using Multilayered Cellular Automata
- Japanese Language Learning Tool: A Web-based Game



Sources:

- Thesis Projects

A Guide for Students in Computer Science and Information Systems

Authors: Mikael Berndtsson, Jörgen Hansson, Björn Olsson, Björn Lundell

ISBN: 978-1-84800-008-7 (Print) 978-1-84800-009-4

- PSITE Undergraduate Research and Capstone Project Manual

Authors: Cherry Lyn Sta. Romana, Randy Gamboa, Dave Marcial, Gregg Victor Gabbison, Allan Sioson

ISBN: 978-971-95389-0-5

- IJCCSE journal of Computer Science How to do Research Step by Step Guide
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Presentation of Shamanthakamani Narendan, Ph. D.

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University of Michigan Proposal Writer's Guide by Don Thackrey

Department of Computer Science, Ryerson University

Jason Eisner of University of Pennsylvania



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Thank you for listening.