

COLLEGE OF COMPUTER AND INFORMATION SCIENCE

Academic Year 2022 – 2023

CS Practicum

Submitted by:
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Submitted to:
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Submitted to the Faculty of Mapúa Malayan Colleges Laguna in Partial Fulfillment of the
Requirements for the degree of Bachelor of Science in Computer Science

Overview of Practicum Engagement

The student has taken the Practicum Learning Path and has proposed modules that are identified as ‘required’ and ‘specialization’ at Mapua Malayan Colleges Laguna. In nature, the modules are separated with soft skills and hard skills. Soft skills being the communication skills, and things that are not generally related to the job description and is more focused on being a productive professional that brings value to a business. The hard skills encompass the technical skills required for jobs that are acquired through learning, training, or experience.

The soft skills modules include Design Thinking, which discusses the thinking of the person, how to organize thoughts in a logical manner, how to create clear solutions to problems, and producing creative works through different means; Project management which discusses how projects are managed, the different roles that comprise a team, and how to work as a team to deliver projects in a timely and effective manner, being able to evaluate the strengths and weaknesses of a specific project effort; Workplace management which helps the student to become more accustomed to the need-to-know culture of companies and being introduced to ways of being more productive, and overall being a professional.

The hard skills are Machine Learning and Data Analytics which generally go hand in hand as both are used for processing data and generating insights about questions a business intends to solve. The Machine Learning modules include the foundations of machine learning, the introduction to deep learning, and exploration of different tools that help train the fundamentals of the student’s knowledge on machine learning. The Data Analytics modules help the user learn the processes and nature of Data Analytics through its building blocks like statistics, data collection and the processes involving it, visualization, and presentation.

The student has rendered a total of 90 hours (45 engagement hours) for the ‘required’ modules, 104 hours (52 engagement hours) for the machine learning modules, and 138 hours (69 engagement hours) total for the data analytics modules, overall having a grand total of 166 engagement hours with 332 credit hours.

Presentation of Output

The student was able to finish all the proposed modules by May 28, 2023, and have learned the topics either through practice or through notetaking. This section will dive in the modules included in the learning path, and what was discussed in each module.



In the Design Thinking learning module, practical examples of each specific module are discussed and explained in more practical applications. The 'Develop Critical Thinking, decision-making, and Problem-solving skills' module discusses the ways of thinking logically with reason and structure, while also avoiding possible pitfalls in logical arguments made by people.

Develop Critical Thinking, Decision-Making, and Problem-solving skills have the specific courses:

- a. Improve your thinking
- b. Critical Thinking
- c. Critical Thinking and Problem Solving
- d. Crafting questions to make better decisions
- e. The six Biases of Decision-Making
- f. Improving your judgement for better Decision-Making
- g. Making quick decisions

The ‘Develop Your Creative Thinking and Innovation Skills’ module provided a classroom-like setup in which activities and skits of emulating creative thinking is enforced to further the discussion of how to be creative.

Develop Your Creative Thinking and Innovation Skills have the specific courses:

- a. Thinking Creatively
- b. Creativity: Generate Ideas in greater quantity and quality
- c. Creativity Boot Camp 2: Creative Fuel
- d. Building Creative Organizations
- e. Unlock your Team’s Creativity
- f. Enhancing Team Innovation
- g. Jeff Dyer on Innovation

The ‘Learning Design Thinking: Lead Change in your Organization’ module explains how to provide value of problem-solving through being people-oriented means, and demonstrating activities that teams can do in their company that would help in solving problems through this human-centered approach.



‘Getting Started as an Agile Project Manager’ discusses the different agile methodologies, the roles that make an agile methodology, the planning, how to manage the team and the client’s expectations, as well as organizing tasks to help keep track of changes done.

Getting Started as an Agile Project Manager have the specific courses:

- a. Agile Project Management with Microsoft Project
- b. Agile at Work: Driving Productive Agile Meetings
- c. Agile at Work: Getting Better with Agile Retrospectives
- d. Agile at Work: Reporting with Agile charts and boards
- e. Agile Project Management: Comparing Agile Tools
- f. Agile Foundations
- g. Transitioning from Waterfall to Agile Project Management

- h. Agile at Work: Building your Agile Team
- i. Agile at Work: Planning with Agile User Stories

'Project Management Foundations' explains the difference between a traditional project methodology like the Waterfall Methodology, and the more client-based approach, Agile Methodology, their pros and cons, and different tools that can maximize a team's project management throughout the whole lifecycle of a specific project.



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Develop Your Communication Skills and Interpersonal Influence 

Lovely Rose R. Gaist at Magus University • Updated Mar 2021

Learn how to clearly convey information and ideas in an engaging manner. Explore how to build trust, communicate effectively, and be heard in all parts of your organization. Learn important interpersonal communication skills and strategies for igniting curiosity, attention, trust, and respect.

Develop Your Communication Skills...

Learn how to clearly convey information and ideas in an engaging manner. Explore how to build trust, communicate effectively, and be heard in all parts of your organization. Learn important interpersonal communication skills and strategies for igniting curiosity, attention, trust, and respect.
9 ITEMS • 7h 46m

Interpersonal Communication 

LinkedIn • By Diana Clark • Updated Dec 2020

Communication Foundations

LinkedIn • By Tatiana Kotovska and Brenda Bailey-Hughes • Updated Nov 2020

‘Time Management Fundamentals’ module tackles how time could be budgeted in the workplace, whether it is how to manage physical files, scheduling meetings, answering emails, and prioritizing which activities are the most important.

On the other hand, ‘Time Management: Working from Home’ shows how to possibly handle working from home due to the nature of the pandemic, and its nature being used more and more by companies in recent times. The module shows how one can balance work and life in an online setting.

‘Business Etiquette: Phone, Email and Text’ shows the different standards in communicating in a professional manner using different communication mediums.

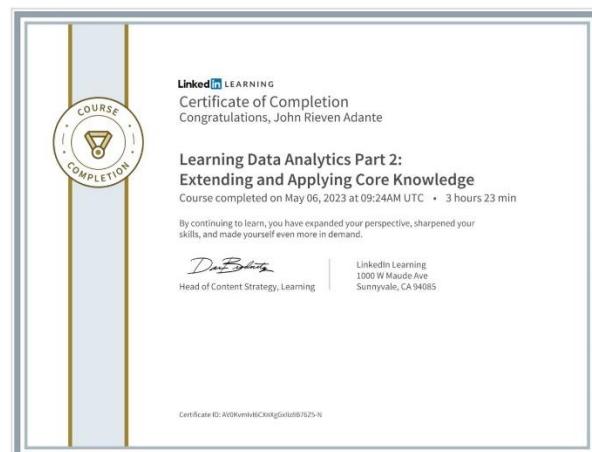
‘5S Workplace Productivity’ discusses how to clean the workplace and maintain it.

‘Develop Your Communication Skills and Interpersonal Influence’ teaches the student to communicate with other people, may it be colleagues, supervisors, subordinates, and group settings. It teaches multiple ways on how to communicate effectively in order to clearly convey messages and avoid possible miscommunication.

Develop Your Communication Skills and Interpersonal Influence have the specific courses:

- a. Interpersonal Communication
- b. Communication Foundations
- c. Building Trust
- d. Building Business Relationships
- e. Igniting Emotional Engagement
- f. Preparing for Successful Communication
- g. Learning to be Approachable

- h. Communicating Nonverbally
- i. Communicating with Diplomacy and Tact



'Become a Data Analyst' is a module that teaches different ways in which to conduct data analysis using different tools but the same foundations of data cleaning, data collection, data analysis, and data visualization.

Become a Data Analyst have the specific courses:

- a. The Non-Technical Skills of Effective Data Scientists
- b. Learning Excel: Data Analysis
- c. Data Fluency: Exploring and Describing Data
- d. Learning Data Analytics 1: Foundations
- e. Learning Data Analytics 2: Extending and Applying Core Knowledge
- f. Excel Statistics Essential Training
- g. Predictive Analysis Essential Training: Data Mining
- h. Power BI Essential Training
- i. Learning Data Visualization
- j. Tableau Essential Training
- k. SQL: Data Reporting and Analysis
- l. R Essential Training: Wrangling and Visualizing Data
- m. Data Cleaning in Python Essential Training

'Become a Data Scientist' focuses more on statistics, data mining, and AI for teaching how data creates a large impact on today's world.

Become a Data Scientist have the specific courses:

- a. A day in the life of a data Scientist
- b. Data Science and Analytics Career Paths and Certifications: First Steps

- c. Data Science foundations
- d. Statistics Foundations 1: The Basics
- e. Statistics Foundations 2: Probability
- f. Data Visualization: Storytelling
- g. Big data in the age of AI
- h. Learning Data Governance
- i. Data Fluency: Exploring and Describing Data
- j. Lessons from Data Scientists
- k. Side Hustle Strategies for Data Science and Analytics Experts

‘Learning Data Analytics 1’, ‘Learning Data Analytics 2’ and ‘Introduction to Career Skills’ in Data Analytics show the different skills that need to be built upon in order to start a career in Data Analytics. It is centered on foundations of Data Analysis, and the different career paths that can be taken in the field of data.



For Machine Learning Modules, ‘Advance your Skills in Natural Language Processing’

teaches the different methods of using NLP like Transformers, the use of Tensorflow, and even Pipelines.

Advance your Skills in Natural Language Processing have the specific courses:

- a. Tensorflow: Working with NLP

- b. Transformers: Text Classification for NLP using BERT
- c. Generative AI: Working with Large Language Models
- d. Advanced NLP with Python for Machine Learning
- e. Applied AI: Building NLP Apps with Hugging Face Transformers
- f. Building NLP Pipelines with spaCy

‘Explore a Career in Machine Learning Engineering’ discusses Artificial Intelligence in general. The module also discusses its subcategories like machine learning, deep learning without getting too deep in to developing a machine learning model.

Explore a Career in Machine Learning Engineering have the specific courses:

- a. Artificial Intelligence Foundations: Thinking Machines
- b. Artificial Intelligence Foundations: Machine Learning
- c. Machine Learning with Python: Foundations
- d. Deep Learning: Getting Started
- e. Reinforcement Learning Foundations
- f. Building and Deploying Deep Learning Applications with Tensorflow
- g. Training Neural Networks in Python
- h. Developing Chatbots with Azure

‘Learning Codeless Machine Learning with KNIME’ is a technical module where machine learning is done on the tool KNIME, a data analytics platform that helps with the integration of data mining and machine learning.

‘Getting Started with AI and Machine Learning’ teaches the basics from using Python, to using Computer Vision, and Linear Algebra. ‘Advance your skills as a Machine Learning Specialist’ is a course that is well focused on the technical aspect of creating machine learning models through coding them, and it includes several machine learning models, and how to optimize them for the best performance.

Getting Started with AI and Machine Learning have the specific courses:

- a. Artificial Intelligence Foundations: Thinking Machines
- b. Machine Learning Foundations: Linear Algebra
- c. Computer Vision Deep Dive in Python
- d. Reinforcement Learning Foundations
- e. Hands-on PyTorch Machine Learning

Synthesis of Practicum Engagement

Specifically, the student was able to learn a lot through the different modules presented.

The discussion of the learnings in each module are as follows:

Design Thinking Module

The student learned about the nature of design thinking being a mindset to get work done while also keeping a team-based environment in mind. Its goal is about getting an idea to the user through the means of business products and/or services. Creating spaces is important for communication so that all ideas of the team can be laid out, displayed and organized to better support problem solving. The student has learned how to be organized in thoughts in problem solving. Asking multiple questions that will help in finding the question that is specific enough to address.

Project Management Module

The student learned that project management is defined as a work that is done with a specific start and end. It usually has budget for resources and time, but it should be organized well enough that it has a clear problem to solve, the approach to solve it, scheduling, documentation, and a clear distinction of what the criteria will be for determining the project if it is finished. Agile methodology is defined as a very adaptive methodology and there are different subcategories such as Extreme Programming, Scrum, etc. that are effective in their own right.

Workplace Management Module

The student has learned various exercises in which decision is made based on communication in specific scenarios. The student also learned how to manage his time based on the different importance and urgencies that are defined. Furthermore, spending time in an online

setting is also learned, and having the right etiquette for email, text, and phone are different in the sense that they vary in formality, structure, and even message. It is also important to note that having a clean workplace is important, and maintaining it shows good company management.

Data Analysis Module

The student learned that in data analysis, you begin to learn to ask questions that are essential to the business and its operations. Everything that you present regarding data should be backed up and validated through calculations, and learning how to find data from a situation is a skill that will be good to have. It is also important to find data from a situation, like finding all possible aspects that can be considered data like not just looking at the obvious aspects but also taking the time to understand how an object could have been made, how long, or anything that could possibly generate a good correlation with another data. The student learned also how to look at data for the first time by finding out everything that it has, from relationships to performing simple tasks, to familiarizing with rules being organized is a recurring theme in the courses and that keeping the dataset so that it can be easily backed up and returned to depending on different actions made on the data so different modifications/versions on the data can be made. Learning tools such as R, PowerBI, Tableau, and Excel are used for the data analysis process, and the specific steps that are needed to help in finding more specific data with how it can be manipulated. Statistics like the central tendency are used for finding the distribution of the data, where variance helps show the user the outliers that a dataset may have, and whether to remove that outlier depends entirely on the situation. Data Visualization taught the student that he needs to create an accurate story with knowledge, that humans learn more with visuals so looking at only letters and numbers will not be as effective. It is also important to know the data, ask questions to know what the audience wants to hear. Focus on only what should only be said, always check again and again the

data you are preparing, to create visualizations so that the audience's first impression or subconscious would notice first what you want them to notice and make it so that the data fits the context.

Machine Learning Module

The student learned multiple machine learning models that have helped him in understanding how machine learning models work, when and how should it be used, as well as the different hyperparameters that would help improve the model. This also applies to deep learning techniques. In applying AI, think about problems in the organizations that computers are better than humans at, where everything we consider today is classified as weak ai because it does not emulate human patterns, rather, they match patterns set by humans to answer queries. Furthermore, application of ai today uses heuristic approaches where it basically narrows down combinations of searching with the current situation. An example is directions where there are only limited ways a driver may go after they went right through a crossroad. It is also said that machine learning can be confused with data science and big data because of how prevalent the use of big data is in machine learning. Machine learning seemed to be better than symbolic reasoning because there are easier means of accessing large data compared to having experts create patterns in data. The application of linear algebra is also discussed, as it can be confused with algebra, but linear algebra is more on functions and matrices and vectors whereas algebra is more on symbols for manipulation. Linear algebra also has many applications in machine learning such as deep learning, data files, image, regularization, data preparation, and linear regression. The process of NLP is also discussed as words in nlp uses tokenizers that puts a code in each word and there could be an option to determine if a word is out of the vocabulary. set padding deals with the requirement of making an input the same shape since deep learning models want all data to have the same

shape. One hot encoding is inefficient for text classification, and this inefficiency is solved using word embedding for creating relationships between words. LSTM is used in RNNs to address consideration of earlier tokens in generating context. Generally, text classification has the process of: *tokenization -> padding -> create model*, and in text generation, the process is *create corpus - > create word index -> tokenize data -> n-gram -> padding -> segregate features*. The student also learned tools such as KNIME, spaCy, Azure, etc. A more in-depth discussion on the how's of machine learning models are also discussed, and while not all of them were remembered by the student, their basic structure, and advantages and disadvantages are the ones that he kept in mind, like decision tree algorithms being greedy, support vector machine being slow but strong in higher dimensions, etc.

In a practical manner, the different learning path modules has taught the student not to just consider the technical skills of a job but also being a good communicator and worker that can contribute heavily to the business. The student learned that creating solutions requires a mindset that revolves around being a team player that tries to cater to the customer in order to help deliver business solutions. Learning to communicate effectively using both body and spoken language so that miscommunication is minimized, and the message is clearly transmitted helped the student realize that spending time actively trying to observe other people goes a long way to communicating effectively. The student also learned about one important aspect of being a professional, which is how to professionally communicate in different mediums like email, phone, and text. All the learnings that have been encountered should be taken into practice if they are deemed helpful to the student. This means creating habits out of the different discussed ways of how to tackle a problem and come up with solutions using design thinking and critical thinking is imperative to make sure the student will grow.

The student would like to create a situation in which his technical skills would be used in a practical setting because the student found out that in order to learn something, practice should be done, and simulating an example would make the student feel immersed in solving a problem without getting real-time help. The situation mentioned is as follows:

Assuming the student is a data scientist, the student would like to try and emulate a situation in which the student am working in a company, and the student am tasked with finding insights and patterns, and then creating predictions using the data in the context of the Filipino Emigrants by City from the years 1988 to 2020.

First, defining the objectives, the student would want to create patterns and gain insights on Filipino Emigrants, and how much they are predicted to be registered in the next year, 2021.

The student did data collection by going to the online dataset of the Philippines, Gov.PH.

These uploaded datasets are official as they are uploaded by and publicly available for access.

The screenshot shows a web browser displaying the GOV.PH Open Data Philippines portal. The page title is "Commission of Filipino Overseas: Statistical Profile Of Registered Filipino Emigrants [1981-2020]". Key details visible include:

- ID:** q8o5akrp-ers2-7hag-m3ds-h7ekl6wqhqs9
- URL:** [https://data.gov.ph/index/public/dataset/commission-of-filipino-overseas-statistical-profile-of-registered-filipino-emigrants-\[1981-2020\]/q8o5akrp-ers2-7hag-m3ds-h7ekl6wqhqs9](https://data.gov.ph/index/public/dataset/commission-of-filipino-overseas-statistical-profile-of-registered-filipino-emigrants-[1981-2020]/q8o5akrp-ers2-7hag-m3ds-h7ekl6wqhqs9)
- SIZE:** 622 KB

Metadata and tags listed:

- Publisher:** Commission on Filipino Overseas
- Created at:** 02/08/2023
- Updated at:** 02/15/2023
- Topics:** Special Concerns
- Tags:** OFW

Dataset Description: Commission of Filipino Overseas: Statistical Profile Of Registered Filipino Emigrants [1981-2020] retrieved from <https://cfo.gov.ph/statistics-2/> on 08 February 2023.

License: Open [open]
Public Access Level: Public

Resources: (link to download)

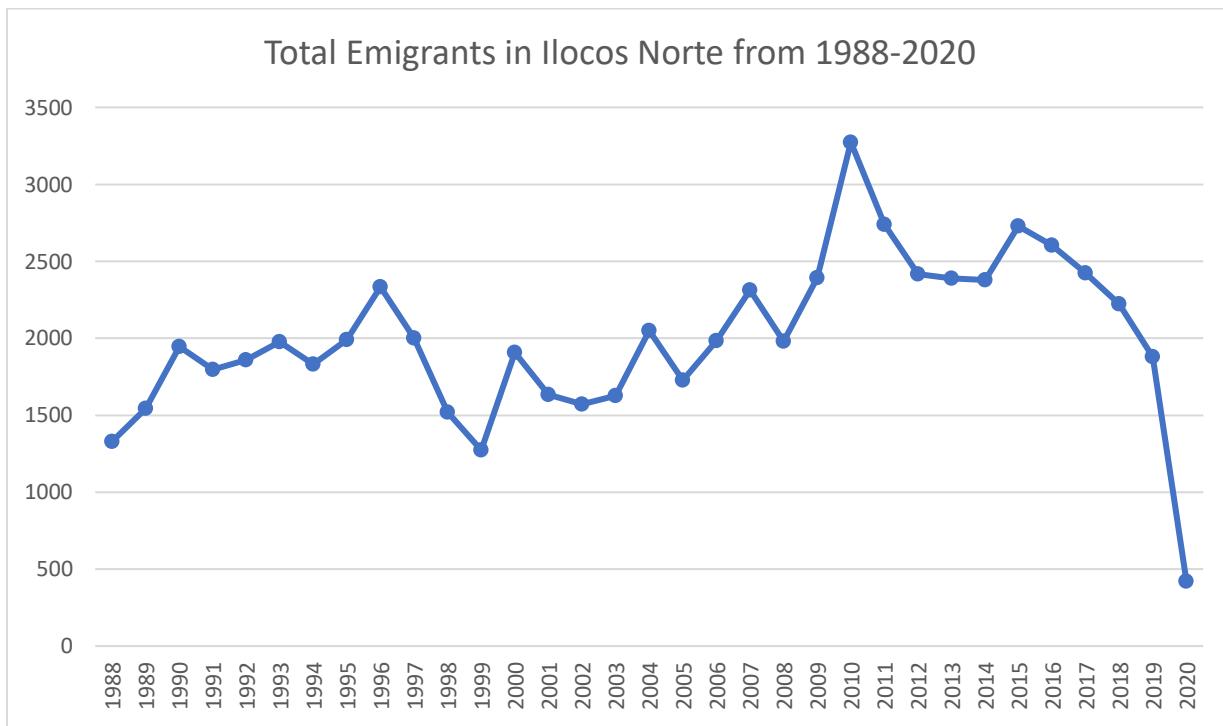
After the student downloaded the dataset, the student took a good look at the dataset first before doing anything. What does the data show? How is it sorted? How many records are there? The first thing the student noticed was that the data revolves on numbers and no text is available. The student believes that this will have a huge impact on the whole data analysis process and has ultimately decided to start with the data based on Municipality out of the three sheets of data available.

The student began to analyze the dataset by asking questions of “does the data need cleaning? And if so, how do the student clean it so the student can achieve the objectives?”

Screenshot of Microsoft Excel showing a large dataset titled "NUMBER OF REGISTERED FILIPINO EMIGRANTS BY CITY / MUNICIPALITY OF ORIGIN IN THE PHILIPPINES: 1988 - 2020". The table has 22 columns representing years from 1988 to 2018, plus additional columns for 2019, 2020, and totals. The rows list various cities and municipalities in Ilocos Norte and Ilocos Sur. Many cells contain empty values or zeros.

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG																
NUMBER OF REGISTERED FILIPINO EMIGRANTS BY CITY / MUNICIPALITY OF ORIGIN IN THE PHILIPPINES: 1988 - 2020																																																
1	CITY / MUNICIPALITY	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018																
2	ILOCOS NORTE																																															
3	ADAMS, (ILOCOS NORTE)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																	
4	BACARRA, (ILOCOS NORTE)	185	204	276	265	246	206	226	202	281	228	203	181	161	159	229	217	206	242	234	305	290	304	290	294	223	203	203	203	203	203	203																
5	BACOD, (ILOCOS NORTE)	58	79	67	96	100	60	87	64	185	107	59	38	82	78	44	42	71	100	110	75	129	71	144	141	106	113	106	107	82	83	83	83	83	83													
6	BANTAY, (ILOCOS NORTE)	34	36	32	37	32	34	34	32	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34												
7	BANNA (ESPIRITU), (ILOCOS NORTE)	42	55	68	49	49	75	61	27	95	34	41	34	54	41	29	31	61	52	32	63	36	47	89	73	63	91	64	102	86	67	67	67	67	67	67												
8	BATAC, (ILOCOS NORTE)	103	25	128	97	120	135	125	151	165	137	76	66	161	98	130	31	155	97	150	183	178	200	169	161	205	200	178	178	178	178	178	178	178														
9	BASAK, (ILOCOS NORTE)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11												
10	CARAS, (ILOCOS NORTE)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11												
11	CAVAN, (ILOCOS NORTE)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11												
12	CAVAN (CAPITAL), (ILOCOS NORTE)	68	73	94	112	119	89	125	139	118	79	61	111	91	83	88	112	89	119	129	86	152	130	137	176	127	133	148	123	123	123	123	123	123	123													
13	CAVAN (CITY), (ILOCOS NORTE)	68	73	94	112	119	89	125	139	118	79	61	111	91	83	88	112	89	119	129	86	152	130	137	176	127	133	148	123	123	123	123	123	123	123													
14	CAVAN (CITY CAPITAL), (ILOCOS NORTE)	68	73	94	112	119	89	125	139	118	79	61	111	91	83	88	112	89	119	129	86	152	130	137	176	127	133	148	123	123	123	123	123	123	123													
15	LAGAS CITY (CAPITAL), (ILOCOS NORTE)	207	269	455	361	450	409	413	578	466	362	308	419	363	344	369	451	409	417	516	419	546	714	608	546	569	465	616	522	533	519	519	519	519	519	519	519											
16	MARCOS, (ILOCOS NORTE)	58	37	67	33	32	40	41	50	50	80	68	44	48	40	31	41	46	41	19	53	59	52	51	49	63	88	69	55	60	64	64	64	64	64	64	64											
17	MARTEL, (ILOCOS NORTE)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11											
18	PALEGUDU, (ILOCOS NORTE)	7	11	9	17	12	35	26	11	18	9	9	18	12	13	16	21	22	22	32	42	40	26	35	41	35	37	36	41	36	36	36	36	36	36	36	36	36	36									
19	PASQUIN, (ILOCOS NORTE)	27	21	38	65	67	60	77	84	73	66	47	48	40	39	40	39	40	37	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47										
20	PASQUIN (PILAR, CONCEPCION), (ILOCOS NORTE)	61	21	38	65	67	60	77	84	73	66	47	48	40	39	40	37	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47										
21	PASQUIN (PILAR, CONCEPCION), (ILOCOS NORTE)	61	52	64	62	59	53	41	58	54	44	30	52	47	37	45	34	40	53	58	47	56	44	76	51	59	59	56	65	68	67	94	68	68	68	68	68	68										
22	PASQUIN (PILAR, CONCEPCION), (ILOCOS NORTE)	24	25	21	39	22	20	37	36	35	31	13	16	35	48	37	37	47	36	48	57	51	49	19	46	45	45	91	52	57	62	58	58	58	58	58	58	58										
23	PERDIDA, (ILOCOS NORTE)	2	2	2	10	2	1	1	4	2	2	1	1	4	2	1	1	4	2	2	1	1	4	2	1	1	4	2	1	1	4	2	1	1	4	2	1	1	4	2	1	1						
24	PERDIDA, (ILOCOS NORTE)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
25	PERDIDA, (ILOCOS NORTE)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
26	PERDIDA, (ILOCOS NORTE)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
27	PERDIDA, (ILOCOS NORTE)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
28	PERDIDA, (ILOCOS NORTE)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
29	PERDIDA, (ILOCOS NORTE)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
30	PERDIDA, (ILOCOS NORTE)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
31	PERDIDA, (ILOCOS NORTE)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
32	ILLOCOS SUR																																															
33	ALILEM, (ILOCOS SUR)	1	0	2	0	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1				
34	BANAYOYO, (ILOCOS SUR)	10	12	81	15	19	81	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19	9	19				
35	BANTAY, (ILOCOS SUR)	34	36	53	66	47	75	61	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
36	BURGOS, (ILOCOS SUR)	6	15	17	26	22	31	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	
37	CABUGAO, (ILOCOS SUR)	61	32	64	62	38	51	41	59	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
38	CANDON, (ILOCOS SUR)	30	35	72	50	60																																										

The first thing that came to mind when trying to visualize the data and try to get insights from is the total number of emigrants in each year, and the Line Chart depicts this. The student believes that using a Line chart is the optimal chart to use because time being a factor. He considered the number of emigrants throughout the years could get taken value from in order to visualize the increase or decrease in emigrants. From the chart, the student can see that the year 2010 had the most emigrants, and by 2015, the number of emigrants slowly decreased until a significant decrease in the year 2020.



Keeping it simple and practical, the student opted using linear regression in scikit-learn for the prediction of the number of emigrants for the year 2021 on only the province of Ilocos Norte for demonstration purposes. It was predicted that the total number of emigrants for the year 2021 for the province of Ilocos Norte is 2144. The student will include this in the presentation of insights along with the chart and other possible insights. The steps the student took in how the student got this should not be included in the presentation because it is not needed considering the student would present these insights to the client. If the student would present this to those knowledgeable on the data analysis process, the student would generally only mention it if asked but will always be open to discuss it in detail. In a real-life scenario, these processes will be done on all the provinces.

```
In [1]: import numpy as np
from sklearn.linear_model import LinearRegression

In [2]: X = np.array([[1988],[1989],[1990],[1991],[1992],[1993],[1994],[1995],[1996],[1997],[1998],[1999],[2000],[2001],[2002],[2003],[2004],
y = np.array([1330,1544,1945,1795,1860,1975,1832,1992,2335,2000,1518,1273,1907,1632,1572,1625,2049,1726,1984,2314,1979,2391,3274,2739,2

model = LinearRegression()
model.fit(X, y)

next_year = np.array([[2021]])
prediction = model.predict(next_year)

print(prediction)
[2144.25378986]
```

In []:

Since the student did not include the charts of other provinces, the student believes that one problem that will arise is not being able to see the different patterns that may be present between different provinces, if a certain year was the reason, or perhaps the population of the province. Nevertheless, this is a very simple example of how the student would approach data analysis and prediction in a specific scenario.

In terms of career paths, the student became more interested in the field of data science, and gaining experience is the first thing that he wants to attain, whether it is training and attending seminars or volunteering in conferences.

Thus, the students believes that the learning path modules have helped him in achieving knowledge that would make him a better professional that would pursue a career in the field of data analysis.

Appendices



Malayan Colleges Laguna
A MAPUA SCHOOL

REVISION NO.: 00
REVISION DATE: May 10, 2018

STUDENT TRAINING AGREEMENT AND LIABILITY WAIVER

IMPORTANT INFORMATION

- THIS FORM IS TO BE ACCOMPLISHED AND SUBMITTED BY STUDENT TRAINEE TO THE PRACTICUM ADVISER BEFORE STARTING THE PRACTICUM.
- READ AND UNDERSTAND THE PROVISIONS OF THIS AGREEMENT AND WAIVER.
- ENSURE THAT ALL SIGNATORIES SIGN THE FORM.

I, JOHN RIEVEN P. ADANTE, and a student of MALAYAN COLLEGES LAGUNA (hereinafter referred to as "MCL", do hereby voluntarily undergo on-the-job training at Malaya Malayan College Laguna, hereinafter referred to as the "Host Company", located at 1st - Dizynto Road, Caluya, 4025 Laguna, under the following terms and conditions:

a. That the practicum training will commence on April 13, 2023 and ends on June 1, 2023 and will have to complete a minimum of 324 hours required for the on-the-job training;

b. That I shall observe proper decorum and act professionally at all times and abide by the Company's rules and regulations and comply with those imposed for the training program, otherwise, I shall be excluded from further participation;

c. That in the course of my training program, I may have access to information which may be of confidential in nature and proprietary to the Company, for which I may be required to execute a confidentiality and non-disclosure agreement as a prerequisite to my participation in the training program;

d. That the time I will spend on the training program in the completion of my on-the-job training requirements will not and should not be interpreted or construed as working hours and should be regarded as non-compensable. Provided that, the Company may, as a unilateral act of liberality or generosity on their part, provide me with meal, travel, transportation allowances, accommodations, etc.;

e. That I fully understand that notwithstanding the allowances enumerated in the preceding section which I may receive, there exists no labor-management and/or employer/employee relationship between me and the Company where I will undergo my training;

f. That I shall exercise due care and diligence in the tasks assigned to me and personally be made answerable for any and all liabilities for damage to property or injury to third person, which may be occasioned by my intentional or negligent acts during the course of my on-the-job training;

g. That I shall likewise hold the Host Company and MCL free and harmless from any and all liability and responsibility for any sickness or injury to myself and third parties and damage to property which I may sustain and/or may occur at any time during the training program, including time spent in traveling to and from any and all premises and locations where I may be required to go to as part of my training program;

h. That the Company reserves the right to discontinue my training on reasonable grounds upon written notice to MCL and myself. Additionally, in the event my training program is discontinued for reasons attributable only to myself, I may be made to reimburse the Host Company for any/all the allowances, stipends, etc., which I may have received from them during and prior to the termination of my training program;

i. That in addition to my liability under section g and for the pre-termination of my training program provided for under section h hereof, I may be subjected further to disciplinary action in accordance with the school's student manual and/or be a ground for disqualification from graduation;

Signed on this 29th day of March 2023.

Signature over printed name of Student Trainee

WITH OUR CONSENT:

Signature over printed name of Parent/Guardian
(for minors only)

NOTED BY:

Printed Name and Signature of Practicum Adviser/ Coordinator

Printed Name and Signature of Host Company Representative



Malayan Colleges Laguna
A MAPUA SCHOOL

REVISION NO.: 00
REVISION DATE: May 10, 2016

PRACTICUM CONFIRMATION AND ACCEPTANCE FORM

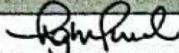
IMPORTANT INFORMATION

- STUDENTS ACCEPTED FOR PRACTICUM IN A HOST COMPANY WILL HAVE TO ACCOMPLISH THIS FORM.
- ASK THE PRACTICUM SUPERVISOR/ COMPANY REPRESENTATIVE TO FILL IN THE DETAILS OF THE TRAINING.
- SUBMIT TO THE PRACTICUM ADVISER/COORDINATOR PRIOR TO THE START OF TRAINING.

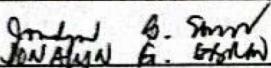
NAME OF STUDENT	JOHN RIEVEN P. ADANTE	STUDENT NUMBER	2019165009
COURSE CODE	CS199F	SY/TERM ENROLLED	2022-2023/3RD TERM

This is to certify that JOHN RIEVEN P. ADANTE (name of student-trainee) has been accepted for practicum at MAPUA MALAYAN COLLEGES LAGUNA at Pulo-Diezmo Road, Cabuyao, 4025 Laguna (name and address of establishment) and will be attached to the College of Computer and Information Science department/s for a minimum of, but not limited to 324 hours. Training will commence on April 3, 2023 and is expected to end on June 1, 2023. Attached is the list of requirements.

COMPANY REPRESENTATIVE

 KATHLEEN G. KIRUCH	 Official Designation
CCS	Email and Contact Number/s

NOTED BY

 JONALYN G. ETIAKA	03/01/2023
---	------------

COPY: (1) STUDENT; (2) HOST COMPANY; (3) PRACTICUM COORDINATOR

FORM OVPAA 030B

THIS FORM IS AVAILABLE AT THE OVPAA.

JOHN RIEVEN P. ADANTE

Villa de Toledo, Balibago, Sta. Rosa Laguna, 4026

0926-0796853

jrievenadante@gmail.com

Objective Summary

A hardworking undergraduate computer science student seeking opportunities to grow and learn emerging technologies, whilst possessing problem-solving and teamwork skills to help in creating IT solutions.

Skills

- **Front-end**
 - Intermediate experience in *HTML, CSS, JavaScript* for designing front-end web applications
 - Beginner knowledge in designing front-end mobile applications using *Kivy* and *Xamarin*
- **Back-end**
 - Capability to create web applications with intermediate experience in *C# with ASP.NET* frameworks (*Web Forms, Web API, MVC (beginner experience)*)
 - *Python* using *Flask* framework, and beginner experience in using *fastAPI* for creating Web APIs
 - Beginner experience in creating machine learning models using *Python (sklearn and Tensorflow)*
 - Knowledgeable in creating cross-platform mobile applications using *Java, Xamarin* and *Python (Kivy)*
 - Ability to use database applications such as *MySQL, MSSQL, SQLite* for light data processing
 - Knowledgeable in using control systems such as *Git* and *GitHub*

Projects / Relevant Experience

Library Management System (March 2021 - May 2021)

- Worked with a team as a developer for both applications as a requirement for a course subject in Mapua Malayan Colleges Laguna
- Library Management System with select modules and functions in mobile and web applications developed using *C# ASP.NET MVC* for website back-end; *HTML, CSS, JavaScript* for front-end; *Java* for mobile application; *MSSQL* for database processing

Project Blasters (February 2022 – March 2022)

- Worked with a team, developed a desktop shoot-em-up game using *Unity, C#, and MySQL* as a requirement for a course subject in Mapua Malayan Colleges Laguna

COVID-19 Vaccination System (December 2021 – June 2022)

- Worked with a team as a full-stack developer as a requirement for a course subject in Mapua Malayan Colleges Laguna
- A COVID-19 vaccination appointment system with both mobile and web application developed using *Python Flask* for back-end and Web API; *HTML, CSS, Bootstrap*, and *JavaScript* for front-end; *MySQL* for database processing; *Xamarin* for mobile application

Gingivitis Detection Application (January 2023 – May 2023)

- Worked with a team as a full-stack developer as a requirement for a course subject in Mapua Malayan Colleges Laguna
- A gingivitis detection mobile application using image processing and deep learning techniques for early detection of gingivitis. Developed using *Python Kivy, OpenCV, Tensorflow Lite*

JOHN RIEVEN P. ADANTE

Villa de Toledo, Balibago, Sta. Rosa Laguna, 4026

0926-0796853

jrievenadante@gmail.com

Certifications and Training

DICT Programming for Beginner Users in Python

Completed in April 2022, the certificate showcases the person has the skills in creating python programs as beginner experience.

DICT Programming for Intermediate Users in Python

Completed in April 2022, the certificate showcases the person has the skills in creating python programs as intermediate experience.

CompTIA ITF+

Completed in July 2022, which shows the ability to identify and explain:

- Applications and Software
- IT Concepts
- IT Infrastructure
- Programming Concepts
- Software Development
- Database Fundamentals
- Basic Security

Learning Path Specialized in Machine Learning

Completed in May 2023, the learning path encompasses learning Machine Learning and Deep Learning Techniques with both practical and theoretical experiences and includes the learning modules:

- Advance your Skills as a Machine Learning Specialist
- Explore a Career in Machine Learning
- Advance your Skills in Natural Language Processing
- Learning Codeless Machine Learning with KNIME
- Getting Started with AI and Machine Learning

Learning Path Specialized in Data Analytics

Completed in May 2023, the learning path encompasses learning Data Analytics and Data Science with both practical and theoretical experiences and includes the learning modules:

- Become a Data Analyst
- Become a Data Scientist
- Career Essentials in Data Analysis by Microsoft and LinkedIn

Design Thinking Learning Path

Completed in April 2023, the learning path encompasses learning and practicing thinking skills and includes the learning modules:

- Learning Design Thinking: Lead Change in Your Organization
- Develop Your Creative Thinking and Innovation Skills Learning Path
- Develop Critical-Thinking, Decision-Making, and Problem-Solving Skills

Project Management Learning Path

Completed in April 2023, the learning path encompasses learning project management, especially Agile methodologies and includes the learning modules:

- Project Management Foundations
- Become an Agile Project Manager

Workplace Management Learning Path

Completed in April 2023, the learning path encompasses learning good workplace management and includes the learning modules:

- Develop Your Communication Skills and Interpersonal Influence
- 5S Workplace Productivity
- Time Management Fundamentals

JOHN RIEVEN P. ADANTE

Villa de Toledo, Balibago, Sta. Rosa Laguna, 4026

0926-0796853

jrievenadante@gmail.com

- Time Management: Working from Home
- Business Etiquette: Phone, Email, and Text

Education

College – Malayan Colleges Laguna (August 2019 – Present)

B.S. Computer Science

- Consistent Dean's Lister and President's Lister

Senior High School – Malayan Colleges Laguna (June 2017 – May 2019)

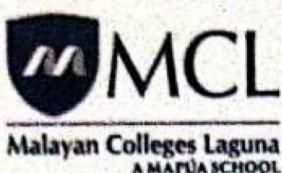
Information Communications Technology - Programming

- Graduated Senior High School with Honors

Affiliations

Mapua Malayan Colleges Laguna Association for Computing Machinery (MMCL-ACM) (August 2020 – May 2023)

- Developed social and teamwork skills from being a Membership Committee Chair (A.Y. 2020-2021)



Malayan Colleges Laguna
A MAPUA SCHOOL



College of Computer
and Information Science
Malayan Colleges Laguna

CS PRACTICUM X LEARNING PATH PROPOSAL

COMPLETE NAME : John Rieven P. Adante
STUDENT NUMBER : 2019165009

PROGRAM : Computer Science

IDENTIFIED LEARNING MODULES

A. Required Learning Modules

1. Design Thinking Learning Module (*Total Engagement Hours: 15 hours Total Credit Hours: 30 hours*)
 - a. Learning Design Thinking: Lead Change in Your Organization by Turi McKinley (2h 8m)
 - b. Develop Your Creative Thinking and Innovation Skills Learning Path 8 courses (8h)
 - c. Develop Critical-Thinking, Decision-Making, and Problem-Solving Skills 6 courses (5h)
2. Project Management Learning Module (*Total Engagement Hours: 15 hours Total Credit Hours: 30 hours*)
 - a. Project Management Foundations by Bonnie Biafore (3h 20m)
 - b. Become an Agile Project Manager Learning Path 9 courses (12h)
3. Workplace Management Learning Module (*Total Engagement Hours: 15 hours Total Credit Hours: 30 hours*)
 - a. Develop Your Communication Skills and Interpersonal Influence 9 courses (8h)
 - b. SS Workplace Productivity by Gemba Academy (1h 36m)
 - c. Time Management Fundamentals by Dave Crenshaw (2h 53m)
 - d. Time Management: Working from Home by Dave Crenshaw (1h 25m)
 - e. Business Etiquette: Phone, Email, and Text by Suzanna Kaye (58m)

B. Specialization Learning Modules

1. Machine Learning (*Total Engagement Hours: 52 hours Total Credit Hours: 104 hours*)
 - a. Advance your Skills as a Machine Learning Specialist by Frederick Nwanganga, Keith McCormick, Kumaran Ponnambalam (14h 47m)
 - b. Explore a Career in Machine Learning Engineering by Doug Rose, Fredrick Nwanganga, Kumaran Ponnambalam, Khaulat Abdulhakeem, Adam Geitgey, Eduardo Corpeño, Bhavani Ravi (11h 17m)
 - c. Advance your Skills in Natural Language Processing by Jonathan Fernandez, Derek Jedamski and Kumaran Ponnambalam (5h 52m)
 - d. Learning Codeless Machine Learning with KNIME by Keith McCormick (11h 28m)
 - e. Getting Started with AI and Machine Learning by Doug Rose, Terezija SemenskiKumaran Ponnambalam, Eduardo Corpeño, Khaulat Abdulhakeem and Helen Sun (9h 27m)

2. Data Analytics (Total Engagement Hours: 69 hours Total Credit Hours: 138 hours)

- a. *Become a Data Analyst (12 Courses) by Keith McCormick, Curt Frye, Barton Pulson, Robin Hunt, Joseph Schmuller, Gini von Courter, Bill Shander, Emma Saunders, Miki tebeka (39h)*
- b. *Become a Data Scientist by Lacey Westphal, Madecraft, Alfonso Berumen, Sara Anstey, Louis Tremblay, Sam Cvetkovski, Keith McCormick, Jungwoo Ryoo, Barton Poulson, Eddie Davila, Bill Shander, Jonathan Reichental, Lacey Westphal, Brett Vanderblock, Madecraft, Michael Galarnyk, Sara Anstey, Louis Tremblay, and Sam Cvetkovski (21h 5m)*
- c. *Career Essentials in Data Analysis by Microsoft and LinkedIn by Robin Hunt (9h 14m)*

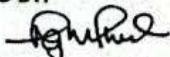
PREPARED BY:



John Bilevel P. Adante / 3-27-23

Signature over Printed Name / Date

APPROVED BY:



CHRISTIAN G. LIKEWELL 3/27/2023

Signature over Printed Name / Date



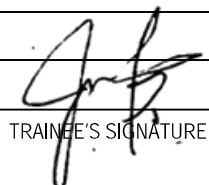
DAILY JOURNAL

IMPORTANT INFORMATION

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC.
- SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LMS.
- HARD COPIES OF THIS FORM SHOULD BE COMPILED AS PART OF THE STUDENT'S PORTFOLIO.

DATE	April 9, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Study Develop Design Thinking	SHIFT/TIME	8am to 5pm

I have now started with the required learning path modules and I decided to start with studying design thinking because of how I think it could help me in viewing the other courses better by having a design thinking mindset. I have learned a lot from the course and I can say that the course definitely has helped me in learning about the approach in solving problems. It taught me to be more patient, more methodical, more collaborative with other people, being more structured and organized in thinking--being focused more on logic and reasoning, and being more human oriented, meaning, being more empathic towards other people whether it be your colleagues, teammates, stakeholders, and possibly more so, the customer as design thinking shows how to get to solutions and relay them to the customers or users depending on the goals of the business. I have also learned that in a team environment, I should be more engaged with how my team is performing and that their opinions should always be taken without much judgement, especially when dealing with finding creative ideas. I have also learned that vague problems should be addressed in such a way that the first step in creating solutions would be to go with the limited information the team has, and that always to use that limited information to help with finding the best solution to problems and requirements. It is also really good to visualize the problem in its nature, from the large scale (its interactions with other people and/or systems) as well as the specifics. I found that design thinking is best for creating organized solutions through logic and reasoning as well as providing ways to improve from mistakes and opportunities.



Trainee's Signature



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DATE	April 13, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Study Project Management Foundations	SHIFT/TIME	8am to 5pm

I have now learned about the project management foundations and have learned many things. This includes how to choose the correct project management life cycle, how to create a project plan, how to approach a project plan, creating project schedules, learning how to communicate effectively with a team, determining the correct roles and responsibilities of each member of the team, how to communicate with the team and the stakeholders, knowing who to communicate with and finding out what the priorities for a project are. I think that these topics are very helpful for me especially when in the workplace, I would most likely be working with a team, and knowing what the leader of a project does, it will help me get equipped with better tools to tackle problems in the event that I become a project manager/leader.



TRAINEE'S SIGNATURE



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DATE	April 14, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Develop critical-thinking, decision making and problem solving skills	SHIFT/TIME	8am to 5pm

The next courses in the learning path of Develop critical-thinking, decision making and problem solving skills I found to be quite similar to the courses that I studied yesterday. I think it really highlights how important they were and that it was more so a standard than it was perspectives from different instructors. It reinforced the importance of changing perspectives, asking questions such as the five why's and the seven so what's in order to actually find out what the problem is or what the consequences of the problem is, as well as understanding it a lot more and finding the root cause of the problem. Furthermore, the topic of making quick decisions is something I definitely needed because I tend to crack under pressure and stop thinking critically. I learned that it was still better to consider quality over quantity (time) but still try to work with the time you have. I also found out that some decisions are better with trusting the instinct and not always being logical as it might make you stuck. You just have to accept that you are accountable for the decisions you make. If you made a mistake, you fix it and learn from

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DATE	April 16, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Study Time management fundamentals, Working from Home and Business Etiquette	SHIFT/TIME	8am to 5pm

I have now started learning time management fundamentals by Dave Crenshaw. I have learned that most of what it takes for time management is being calm and learning how to prioritize what is important. By organizing what thoughts you have by putting writing them down, you would not need to be overwhelmed mentally when you think about the things you have to do. By setting up how your calendar records your schedule, your email, and even how you take notes of your ideas and thoughts are what makes it essential to have a more stress-free and organized day. You also need to set designated times for what you want to do by identifying what you want to do, how long can you finish it, and how you get rid of that thought. Knowing that would already make you good enough to do which task is important and easy to do, as well as avoiding multitasking. Multitasking as I have learned is not really true and it is what is called switch tasking where the mind switches its attention from one task to another but unlike the intended purpose of multitasking which is to eliminate time, it ultimately makes finishing the two tasks longer than focusing on just one at a time. I have learned the value of doing tasks with urgency organization, as well as planning well the activities for a day or for a week. Learning about time management by working from home I thought would be essential, given the situation of the global pandemic and it is helpful in lost of ways but I think that most of what was tackled were things I was already doing the whole time of being in a pandemic. I have separate time for when I want to do tasks, setting up my environment for better learning,

to disturb me. These I think are very basic and I do not think I have learned as much as the other courses. With that, I thought that learning another course would help me fulfill that quota for learning and so I have learned how I need to create my emails, how I can set up autoresponders, and even how to send a text message. While I do most of what was being discussed, I knew that the course would help me improve on what I know, and it did because I was able to realize that some of the emails I compose and how I talk in a phone call are not how I want to convey my message, and making it so I better convey it is what I have learned.

TRAIÑEE'S SIGNATURE



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DATE	April 18, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Start studying Develop critical-thinking, decision making and problem solving skills	SHIFT/TIME	8am to 5pm

When starting to study critical thinking, it is important for me to realize how nobody actually just has the solution to the problem right from the get-go. There is really process in creating solutions to problems. The most important lessons I remember are: break the problem into problems so small that you can start with that, and work your way up; To essentially know the root cause of the problem; To try and create scenarios with the intention of finding consequences of actions you will take. Furthermore, doing this with the thought of considering the people involved is also one aspect that should be considered when making a decision, as well as knowing how to change perspectives by imagining who will be involved in the problem can give a refreshing point of view, and not being limited to what is given. While it is a start, it is not necessary. I also learned how common pitfalls can be especially because we are human, and sometimes our actions are done mainly from emotion and without logic. We must avoid it especially when we become overwhelmed. I think decision making and critical thinking really highlights how important they were and

reinforced the importance of changing perspectives, asking questions such as the five why's and the seven so what's in order to actually find out what the problem is or what the consequences of the problem is, as well as understanding it a lot more and finding the root cause of the problem. I learned that it was still better to consider quality over quantity (time) but still try to work with the time you have. I also found out that some decisions are better with trusting the instinct and not always being logical as it might make you stuck. You just have to accept that you are accountable for the decisions you make.

TRAINER'S SIGNATURE



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DATE	April 19, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Start develop skills and interpersonal Influence	SHIFT/TIME	8am to 5pm

In learning about communicating with other people, I have learned to think about what to say first and not rushing anything that comes to mind. I have also learned that verbal cues are half of what conversations with people comprise of. It puts special emphasis on how important face to face communications are instead of just audio call or video call. Furthermore, it has also been discussed how to consider feedback depending on how positive or negative it may be. It is also important to contextualize all the things that are said because it may not be what was intended and miscommunication may happen.

In communicating, we also need to learn how to listen because it is more important than speaking. Know how to ask for something and make the right decisions when communicating with colleagues as well as presenting your work by first preparing and considering the audience and what they want to know first. Also being aware of how I could be projecting my body language and how I can adjust them to fit the situation or how I want the person I am communicating with to be impacted by my words and actions. Qualities such as being reliable, compassionate,

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DATE	April 21, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Continue Develop Your Communication Skills and Interpersonal Influence	SHIFT/TIME	8am to 5pm

There is a concept that is called decoding and encoding nonverbal signals, and I found that to be interesting because as I have some prior knowledge about the topic, I learned that there is more to it than just reading the other person. It is more about observation because the more I learned that people are all information that is just needed to be analyzed by the right person, the more I am convinced that I should observe more and not think about other things like what to do in the future. It is important to be mindful and present of the moment because it may become negative if you somehow seem like uninterested, nervous or embarrassed because there are tells and signs like the position of their torso, feet, hands, and eyes. Being tactful in sending messages is also important as I have learned how to be aware of the timing of the message I want to send would be beneficial or detrimental depending on the situation. This is especially true when there are less information available. Furthermore, we should learn how to say something with reason and logic, while also considering how it would affect the other person receiving it. Another quality I want to have is being charismatic as I want to make the room I am in to be light on default but can easily turn into professional as soon as it is needed. It is important to make others be more included by asking whether they are all right, inviting them, and being more approachable altogether. I found that I am not doing feedback checking by asking other people's opinions or feedback about how approachable I seem to be. I plan to keep this in mind especially when I want to improve on this aspect of communication.

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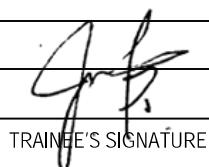
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DATE	April 22, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Finish develop skills and interpersonal Influence	SHIFT/TIME	8am to 5pm

There are different scenarios in which I, as a future professional in the workforce, are really common that I should be able to recognize and respond immediately. This is because it is important to be empathetic, know how to build rapport, be attentive in listening, while also being polite. I see that there should be a way of assessing the situation while thinking about how to approach it. It is important to become someone with logic and reason especially when people are starting to use emotions as their arguments in a professional setting. This is something that should be recognized as people, in the heat of the moment, could overlook this and just let loose. I do not think I will fall victim to this easily, but there would be times when I will be affected by something frustrating. I will try to step back and think first, maybe take a deep breath and know how to respond in a polite way while also getting my message across.



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DATE	April 26, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Develop Your Creative Thinking and Innovation Skills	SHIFT/TIME	8am to 5pm

I liked the discussion of Stefan Mumaw when he taught the course by treating it as if it were a classroom. The activities that were held were something that I definitely learned from because of how interactive it was for the people involved, including me. Being more creating has become something that I have low confidence on because I rarely get innovative ideas. There have been different definitions of creativity, that being something that has not been done before and is something useful, as well as being a process that happens in the mind being new, useful and surprising. It should be something new for the person his/herself. It should also be noted that fixedness on something is essentially a barrier to being creative. An aspect that I could apply as well is thinking about the components of something I want to use as basis for being creative. This is because it is harder to be creative when there is essentially no boundaries and constraints even though it sounds counterintuitive. I can say that it works because having a constraint makes it easier to understand what problem there is to solve, and the different ideas that can be applied to it because it is constrained to a field in order to solve the problem. Working with teams is also inevitable, and so working to create something creative with a team should be facilitated well and done together in order to gather the minds of the team to form ideas that can become the creative proposal from several perspectives and where all members of the team should be encouraged to speak without any judgement.

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DATE	April 27, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying 5S Workplace Productivity and being an agile project manager	SHIFT/TIME	8am to 5pm

I expected the 5s to be something that is related to how the nature of a professional should be in the context of being productive but it is more than that because the course followed more of cleanliness and organization with the workplace. Naturally, I do think that it improves productivity because less clutter and trash would mean the professional would be able to focus more and thus become more productive, but knowing how to sort the things that are used is imperative to securing the workplace of unnecessary things that may happen to be distractions. Also learning how to maximize the position and place of the things we are using, whether it is common or not. The position should be somewhere close when we are using it frequently, and labels to be placed on storage that is addressed infrequently. Maintaining that also is what we need to be doing as professionals because risking more clutter to be cleaned is not something a company would want.

I think that working with an agile project is what I would like when I am in the workforce because of the flexibility, and working with people that I would consider to be professionals and can pull their weight, I think that I can properly say that I will thrive more in that environment because of the stimulation of thinking and brainstorming that will occur. Having the agile mindset becomes another thing that I want to get. The mindset of not being a traditionalist and embracing what has worked in the past should learn that times are changing and for projects that are to be considered to be complex and where customers would want quick results, adapting this management and mindset sets apart a good management to effective management

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DATE	April 28, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying getting started as an agile project manager	SHIFT/TIME	8am to 5pm

The penny game stuck to me when learning about managing agile projects because it shows how much the division of tasks between members should be done and being more collaborative with the work should be done as it accomplishes more than what we thought would be productive when just focusing on one thing first. I also noted which tasks should be prioritized with how big the impact of a functionality should be. I could definitely see an example of how this would be done when we, as a team were to be more impactful when talking about the iteration of the project in a meeting. I also noticed how incredibly adaptive in such a short amount of time being agile shows. This is because of how short an iteration would be, the team will be able to evaluate and reflect on the weaknesses and strengths of the iteration, and the actions as to how the next goals can be achieved. Using tools such as trello is something that I was familiar with, and have had experience before especially when it was used for software development. While the project did not have an agile approach, it was still organized well enough that using the trello or project management tool helps the team in multiple aspects not just in formality and documentation.


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DATE	April 29, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Finishing getting started as an agile project manager	SHIFT/TIME	8am to 5pm

I experienced that creating user stories is highly effective in determining what a user wants and possibly how they want it to be done. This is because it incorporates the idea of being more empathetic and putting yourself in the user's shoes in order to find what they want. Furthermore, grouping them is something I never thought of, more so because I thought it was enough to be determining the user stories, but also how they could be grouped for better understanding. The documentation, however, is kind of tedious and applying and following it for documentation seems to be the documents that tracks the progress of the team. Determining the role of an agile project shows the mindset of how agile projects should go, especially with how scrum masters affect the team. They are the ones who are not the ones to lead the team, but only to enable the team to help themselves and become self-organizing. While I can not apply these now because I am not in a team, and I do not have project stakeholders in my personal projects as one core value of being agile is feedback, and I can not get feedback from possible users, when the goal of my projects is to build my skills as a developer without the goal of managing a project with an agile mindset.



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DATE	May 1, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Become a Data Analyst learning path	SHIFT/TIME	8am to 5pm

I have started tackling the specialized modules in my learning path, and I have learned quite a bit. I was frankly excited about starting to learn because this topic is something that I am quite interested in, and being able to finally start studying it makes me look forward to learning.

I have learned about the fundamentals of being a data scientist, which involves nontechnical skills. I remember a quote from Keith McCormick about the job being treated more as a detective than someone who just follows recipes. Being curious, skeptic, and even the approach of trying everything not to believe what the data is portraying, are things that I genuinely agree with and plan to adopt and internalize as I plan to be an aspiring data scientist.

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DATE	May 2, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Become a Data Analyst learning path	SHIFT/TIME	8am to 5pm

Learning excel over again, I had the impression of the course being easy because I was confident in knowing the fundamentals of creating formulas in excel. As it turned out, there is more than just formulas, and while I was able to keep up with the calculations of some formulas and how it should be used in a practical environment, I learned that there are a lot that I can not easily learn and memorize them all in one sitting. I needed to practice them, and internalize on when and how I would plan to use them in the real world if I were to analyze data using excel. Variance and distribution of data I think, should be used when getting information on how different the data is, and testing hypotheses when trying to find the answer to certain problems, as well as visualizing it I know would be useful in the future, and I intend to apply it on my practice attempts of data analysis.


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DATE	May 3, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Become a Data Analyst learning path	SHIFT/TIME	8am to 5pm

As someone who wants to be a data analyst, I want to make better decisions when dealing with the data I plan to use and analyze. Making these decision by using data to create more from the initial context we have and how to weigh the choices by determining how big of an impact that choice could create. The different steps to the data is shown to come from many different sources. I do not know how to get the data that analysts use, but I know that I can just pay for it from companies, so I can assess the data and plan how to approach the data. Making it imperative to know the data a lot more than other parts of the process. Visuals are also very important considering how it creates information that can shift the perspective because of how visual the nature of people are. As mentioned before, the calculations that can be done using statistics show that it is important especially in comparison and getting insights


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DATE	May 5, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Become a Data Analyst learning path	SHIFT/TIME	8am to 5pm

Learning data analysis showed me that I need to begin to learn to ask questions that are essential to the business and its operations. This means being more concerned with the solution in the business sense and not just for the sake of solving a problem, just make sure that the data is backed up and validated through calculations. I do have some experience about cleaning data and make sure the data is usable for all parties. In everything that we can see, especially in situations where a business solution could be found, I remember that I should find the data from situation and understand that aspects also provide a strong feedback, as well as asking the right questions when encountering them for the first time. I also never noticed that data analysis is not just about being able to manipulate, transform, and visualize the data, but also being fluent enough to present that data so people outside the teams that are stakeholders.

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DATE	May 6, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Become a Data Analyst learning path	SHIFT/TIME	8am to 5pm

I have learned various things from applying the core knowledge learned from the fundamentals of data analysis. One is to always follow the business rules. This is because no matter what happens to the data, as long as it doesn't support the business rules defined, there is no use to it because it cannot be used by the customer. I have also learned about the use of different tables, visualizations, pivot tables, and their formatting in excel, power BI, and even power query access for cleaning and transforming, as well as querying data. By cleaning and transforming the data, it makes the data more useful with how it can be specifically altered to address a problem. It is also interesting to know to consider how the audience might perceive the data visualization and how it looks on first impressions in order to make it more understandable and appealing. I noticed that documenting data procedures makes it easier to understand the data and how it was modified.

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DATE	May 9, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Become a Data Analyst learning path	SHIFT/TIME	8am to 5pm

Learning another excel course, while there are a lot of similar topics discussed, I took it as additional practice to see whether I did learn what the lesson was telling me, and how it can impact other aspects of the data. I know that statistics are not just numbers to calculate data but also can be used to create comparisons and similarities but in order to be a good data analyst, one must also be a good statistician because we need to be capable of finding the parameters of a population that would suit the description of it. Also, finding correlations between samples and making hypotheses is vital especially when getting inferences about the population. Maybe when I deal with an example situation of how a group of a singular team performs and how it can be compared to all the teams in the company, such computations may be used.



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DATE	May 10, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Become a Data Analyst learning path	SHIFT/TIME	8am to 5pm

Using different tools such as Power BI and Tableau for visualizing data, and the introduction of using an easy tool for data analysis makes it apparent that the presentation of data not just in the form of graphs, but also in their relationships. Creating dashboards from the data is also something which I found to be interesting because of how interactive it made the presentation of data look. Even if dashboards are only one page, it should perfectly summarize the data and what it needs to present to the users. Of course, this in turn would suggest the idea of determining first how the data will be presented. Especially considering whether it would be on paper or only generated as a presentation. This makes it easier to understand the data, which is always the goal of data analysis. Tableau as well, showed similar functionalities as Power BI, but I noticed there to be more freedom in data manipulation and the ease of use.

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DATE	May 11, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Studying Become a Data Analyst learning path	SHIFT/TIME	8am to 5pm

I had a refresher on the use of SQL language, and have found out that it is more than just making queries, but also considering functions, procedures, as well as variable declaration and usage made me think that it is not as basic as I made it out to be. I also learned that I need to practice more on my SQL skills because I was not instantly able to answer the questions asked without losing a substantial amount of time. Additionally, learning about data visualization shows to always create an accurate story with knowledge. This is because humans learn more from visuals so looking at only letters and numbers are not enough and is not as effective. Thus, we need to know the data first, and ask questions to know what the audience wants to hear, depending on who they are. I found it to be helpful that the tip was to always check the data again and again, creating multiple iterations to ensure the success of data analysis. I also learned about websites where cheatsheets are present to help about which graphs and charts are to be used for representing different information such as comparison, correlation, etc. It is also important to focus on clarity and think about whether the situation requires more precision of data, and to always be clear with how the data is presented, also making it relate to the audience for ease of understanding, and still the importance of feedback shows since choosing between different perspectives would be the case.


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DATE	May 13, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Finish Become a Data Analyst learning path	SHIFT/TIME	8am to 5pm

Having background on data analysis using dataframes, I learned about R, and how similar it can get with python data analysis using notebooks. Being more technical in nature, I think that I should practice analyzing online datasets for me to learn the most I can from the course with visualizations, transformation, as well as the recoding of data. With actually using the notebook for data cleaning in python, I just learned about github codespaces where it makes it easier for the users to learn when coding while following the course videos and how easy to use it is without much download. Some of the things I remembered the most was to organize data so you can group them together in a single column as to make it easier and cleaner data reading and understanding. You can also check whether data loaded has bad rows/values by defining the validation and subtracting the amount of correct rows found and the total rows and getting the percentage. This might give the knowledge of whether to continue using the dataset or not.



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DATE	May 20, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Start become a data scientist	SHIFT/TIME	8am to 5pm

I started learning about the nature of data scientists by the eyes of professionals and how they built their career. I learnt that machine learning helps humans from repetitive tasks, and that data mining is more on finding patterns in data. It is also heavily emphasized that machine learning and data analytics are closely related and very powerful. Attending workshops and conferences to build networks is good for building a career. Experience is also a really important aspect in a resume if not the most important, and that having a mentor and being a mentor to others helps build knowledge and application of the things you know, and that building soft skills is just as important as technical skills.

On the other hand, some data science fundamentals I have learned are that algebra help programs become scalable, passive collection of data uses ML for actions done, start with general information when getting insights and then start going specific, and possibly the most important, which is combining information is almost always better than individual bits of data.



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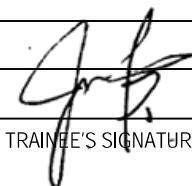
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DATE	May 21, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Finish become a data scientist	SHIFT/TIME	8am to 5pm

More tips and insights have been discovered when it comes to visualization of data which is to tell a story. I think that data means nothing without the context if it, and that it should always have a narrative. Every situation and problem that a data scientist will face depends on the type of solution that is needed. Considering who the audience is, find what you want to say, and consider what the audience wants to hear, and ask questions that may help in getting information regarding the data, and make each element as simple as possible.

A lesson I learned in aspiring to be a data scientist or analyst is to be able to communicate the insights the data may have like relaying a technical aspect in such a nontechnical way that it is easy to understand. This means that questioning the dataset that is present is also required for finding out the quality of data. Furthermore, big data is very prevalent that we live in a world of big data, and that it can be used to help with creating something new that would help a business, improve user interactions as well. While all this is important, governing data is also important with how it is intended to be strategised and minimizing risks.

I also realized that I want to consider being involved with contributing to writing books do data science competitions and just basically act on my favorite ideas in order to build my career further.



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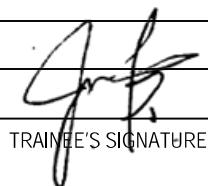
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DATE	May 22, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Finish career essentials in DA and start ML courses	SHIFT/TIME	8am to 5pm

I learned to be curious not just about data but also in any topic because it can also be an angle where data can be extracted from. The difference of various careers in the field of data science is discussed, and I would like to be a data scientist where coding and data analytics is applied, and make better data driven decisions.

I also started learning about the foundations of AI, and apparently, everything we consider today as AI is classified as weak AI because it does not emulate human patterns. I found that to be a huge change in perspective because of how I am not an exception with the general public's perception of AI. I also learned that machine learning has what is called heuristic approaches where experts are used to define limited ways of defining outcomes. Linear algebra is also a topic I found to be confusing to study as I did not find a very practical use for it, but then realized how it is used in preparing the data for training machine learning models.



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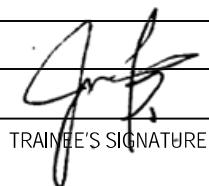
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DATE	May 24, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	start codeless ML using KNIME and explore a career in MLE	SHIFT/TIME	8am to 5pm

I have background on deep learning as I have been able to create an application with an implementation of deep learning techniques, so I can quite relate to the different actions and steps that are involved. I just expanded my knowledge by learning the specifics of it. Forward propagation, and back propagation, the different hyper parameters that can be experimented with, I also did that in my previous experience with deep learning techniques. This is also the case for computer vision and the basics of machine learning. Since I had such backgrounds on topics, I have been able to get refreshers on it and did not need too much focus on understanding some courses. A topic I have not much experience however, was reinforcement learning where it considers the environment and the state of the machine, and solving problems regarding it needs to be broken down into states that can be explored. This also means that sequential decisions are done, and each decision before the last is considered, and learns through trial and error. I found it to be fascinating for the most part, and the advancement of machine learning and its dominance with the rise of different AIs show how vital it is to today's lifestyle



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DATE	May 25, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	study codeless ML using KNIME and explore a career in MLE	SHIFT/TIME	8am to 5pm

I again get refreshers on the nature of machine learning, and with the use of python and TensorFlow, those which I have intermediate experience in. What I learned about the most was Explainable AI and making machine learning solutions be interpretable. This is because there are issues that are quite common with machine learning performance which are: is the results transparent, as well as the reason, and whether if it is high stakes because of it being beneficial to explain the prediction of trained machine learning models. This is because as humans, we would trust the predictions of these models to make decisions for us but depending on the nature of the situation because of fields like banks and government related topics. This is where the prediction based on a specific situation is discussed and not the overall predictive model. Doing all these in KNIME with the intention of creating XAI and IML. I was also fascinated with the idea of chatbots and have been able to take a peek into what the requirements for making them are. I also realize that effective chatbots would incorporate NLP to help in understanding and communicating with humans. Chatbots need to understand human language like conversation design service and create structured data which is then sent to an action server to output into a natural language.

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DATE	May 26, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Finish learning codeless ML using KNIME	SHIFT/TIME	8am to 5pm

In learning more about the nature of KNIME and the implementation of different Machine Learning algorithms, I have come to learn more about the Decision Tree, in which I have some background, but what I didn't know was that the different specific decision tree algorithms that addresses the main weakness of the algorithm as a whole, which is the nature of it being greedy. Practicing implementing these using tools like KNIME and WEKA with the idea of decision trees having a divide and conquer, separate and conquer, and generally the advanced concepts of decision trees like Random Forests that combines multiple decision trees and aggregates those separate trees' predictions to create a final prediction.



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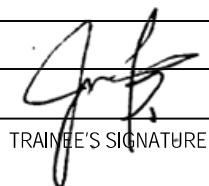
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DATE	May 27, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Finish Advance your skills in NLP	SHIFT/TIME	8am to 5pm

With the initial courses I had watched related to NLP, I have been able to understand most of the discussions made in the basic structure of NLP. I learned about the specifics of the different models in the field of NLP like the use of both Machine Learning and Deep Learning techniques like BERT with tools like spaCy, which is a framework that encompasses the functions of NLP which are tokenization, linguistic annotations, named entity recognition, etc. I noticed that the usage of transformers make it so that more accurate predictions are made which is due to better understanding and processing of the text like in a search history where a specific word is critical for determining the purpose of a search query. Being able to understand how important that word is, and recognizing how it is used is the power of transformers and is largely part of the reason why it is powerful. This is also related to Question Answering tasks that bases the answer on the context and extracting the sentence from said context.



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DATE	May 28, 2023	AREA ASSIGNMENT	Mapua Malayan Colleges Laguna
TASK	Finish Advance your skills as a ML Specialist	SHIFT/TIME	8am to 5pm

I learned about how machine learning models can be tuned and optimized for better performance in both front and back propagation. This is mostly done by using different hyper parameters for epochs, batch size, weights, nodes in deep learning, even optimizers, checking the learning rate, and even for the possible overfitting of a model. Also, I found out how important it is to find the prediction, causation and statistical inference of a model because it taught me what is safe to conclude from the statistics mentioned in the model to use it more effectively especially in the field of data analytics, which is my intention. This is mostly done using the statistics that have been discussed in my data analytics specialized modules in my learning path, and applying them practically to create inferences that are beneficial for the business solution needed. As I finished the specialized modules for my learning path, I plan to study additional sources in my data science field like the course "Advance your Skills in Predictive Analytics" because of how it is heavily related to data science. I want to learn more about how data is directly involved with predictive analysis done, and which tools I can use to hone my data science skills.



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