



كلية أبوظبي للإدارة
ABU DHABI SCHOOL OF MANAGEMENT

A night-time photograph of a city skyline, likely Dubai, with several illuminated skyscrapers. The image is overlaid with various data visualization elements: a bar chart with a '78%' label, a line graph with an upward arrow, a lightbulb icon, a laptop icon, a cloud with an upload arrow, and an envelope icon. The background is a dark blue gradient.

MASTER OF SCIENCE IN **BUSINESS ANALYTICS**

CAPSTONE

PROJECT PUBLICATIONS

2019-2020

A decorative graphic in the bottom right corner consisting of a grid of squares in various shades of blue and white.

PRESIDENT'S MESSAGE



The Abu Dhabi School of Management's objective is to prepare leaders who have the knowledge, skills, and competencies to positively impact their environments. At ADSM, the Business Analytics Program ensures that our students learn critical analytic skills, contemporary theories, and the latest technological models of analytics to address business challenges. Students are given an opportunity to learn, develop, and succeed in the new and exciting field of analytics. The knowledge, skills, and competencies they acquire can be applied anywhere in the world, including within the contexts in which they live, work, and interact.

The Capstone Project requirement is an essential component of the students' academic work in the Business Analytics Program. It enables them to apply the knowledge and skills of analytics to real-world business contexts. It provides them with a unique learning opportunity that enhances their learning in several different important and emerging areas including artificial intelligence, machine learning, neural networks, and image recognition.

I am delighted to share with you the Capstone Projects Publication Booklet for AY 2019-2020, presenting real-world projects which highlight the achievements of ADSM's Business Analytics graduates.

Professor Abdullah Abonamah, PhD
President & Provost

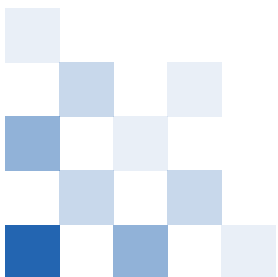




DEAN'S MESSAGE

The Abu Dhabi School of Management (ADSM) aims to create an enriching and rewarding environment which promotes entrepreneurialism, scholarly inquiry, research, and UAE cultural heritage while fostering diversity, understanding and tolerance. Capstone Projects embodies the significant research and creative work as core elements of the highest quality of MS Business Analytics program. This Capstone Projects publication booklet provides you the abstracts from the Capstone Projects that highlight the formidable intellectual insights and achievement of students for the AY 2019-2020.

Dr. Marc Poulin
Academic Dean



INTRODUCTION

At ADSM, the Capstone Project is a graduation requirement by each student of the MS in the Business Analytics program. It is a culminating piece of work which gives the student the opportunity to apply business analytics contemporary models, theories, and technologies to real-world problems.

The Capstone is a year-long endeavor that makes students experience real-world analytics using organizational big data. It turns learning into practice. Students address business challenges by identifying opportunities and posing novel critical questions using big data and machine learning theories, technologies, and models. They gather and analyze big data, construct machine learning models, discover patterns, gain business insights, and make recommendations to address business challenges. Using the insights they gain, they can propose areas to improve efficiency, productivity, and profitability of businesses.

This booklet represents eight Capstone Projects from the 2019-2020 academic year, which were published in SCOPUS-Indexed journals. The projects were conducted by fourteen students.

Disclaimer:

The Abu Dhabi School of Management attempts to ensure the information contained in this publication is correct at the time of production (Feb/2021). However, sections may be amended without notice by the School in response to changing circumstances or for any other reason. Visit the ADSM website or contact the School for any updated information.

D-TALK

Cohort: July/Spring 2019 | **Project Date:** September 2019



INTRODUCTION

D-Talk is an application that can help to use sign assistances instead of voice. This application comes in PCs only and will use web camera to recognize the signs that user wave so it can help people to do many tasks, such as opening calendar, browser, open Microsoft Word and other needy applications.



STUDENTS

- Bayan Mohammed Saleh
- Reem Ibrahim Al Beshr



SUPERVISOR

- Dr. Muhammad Usman Tariq



PUBLICATION DETAILS

- 📄 **Published** – Saleh, B.A, Al-Besher, R.I, Tariq, M.U. (2020). D-Talk: Sign Language Recognition System for People with Disability using Machine Learning and Image Processing, International Journal of Advanced Trends in Computer Science and Engineering (IJATCSE), 9(4).



<https://bit.ly/3oGqhna>

MOOD DETECTION BASED ON ARABIC TEXT DOCUMENTS USING MACHINE LEARNING

Cohort: July/Spring 2019 | Project Date: September 2019



INTRODUCTION

The project focused on applying various machine learning algorithms that are based on text mining to detect the moods of people while posting texts on social media. The goal was to identify if they are angry, happy, sad, or fearful. In this way, targeted intervention may be designed, including ads, articles, and video clips.



STUDENTS

- Abdel Basit
- Mohammad Sami Al Kafri




SUPERVISOR

- Dr. Abdullah Abonamah



PUBLICATION DETAILS

 **Published** - Al-Kafri, M., Hussein, A., Abonamah, A., Tariq, M.U. (2020). Mood Detection Based on Arabic Text Documents using Machine Learning Methods, International Journal of Advanced Trends in Computer Science and Engineering (IJATCSE), 9(4).



<https://bit.ly/2Loscym>

MOOD ANALYSIS USING FACIAL RECOGNITION

Cohort: July/Spring 2019 | Project Date: September 2019



INTRODUCTION

This project focused on development of a model trained by deep learning to detect various mood of participants in order to identify their subject areas of interest so that they can advise and guide the students in selecting right Courses when they are seeking admission to college.



STUDENTS

- Taif Abdalla Al Rayssi



SUPERVISOR

- Dr. Samar Shilbayeh



PUBLICATION DETAILS



Published - Taif. A., Shilbayeh, S. (2020). Mood analysis using Facial Recognition, International Journal of Advanced Trends in Computer Science and Engineering (IJATCSE).



<https://bit.ly/3qoZOev>

AUTISM SPECTRUM DISORDER DIAGNOSIS USING OPTIMAL MACHINE LEARNING METHODS

Cohort: July/Spring 2019 | Project Date: September 2019



INTRODUCTION

Autism spectrum disorder (ASD) is the disorder of communication and behavior that affects children and adults. It can be diagnosed at any stage of life. Most importantly, the first two years of life, regardless of ethnicity, race, or economic groups. There are different variations of ASD according to the severity and type of symptoms experienced by people. It is a lifelong disorder, but treatment and services can improve the symptoms. The literature focuses on one of the main methods used by physicians to diagnose ASD. Many types of research and medical reports have been reviewed; however, a few of them only give good medical results for the strong differentiation of ASD from healthy people. This paper focuses on using machine learning algorithms to predict an individual with specific ASD symptoms. The target is to predict an individual with specific ASD symptoms and finding the best machine learning model for diagnosis. Further, the paper aims to make the autism diagnosis faster to deliver the required treatment at an early stage of child development.



STUDENTS

- Maitha Rashid Alteneiji
- Layla Mohammed Alqaydi



SUPERVISOR

- Dr. Muhammad Usman Tariq



PUBLICATION DETAILS



Published - Maitha Rashid Alteneiji, Layla Mohammed Alqaydi, Dr. Muhammad Usman Tariq (2020). Autism Spectrum Disorder Diagnosis using Optimal Machine Learning Methods, International Journal of Advanced Computer Science and Applications, 11(9).



<https://bit.ly/3i05F6Z>

SHARE MARKET RECOMMENDER

Cohort: July/Spring 2019 | Project Date: September 2019



INTRODUCTION

The Share Market Recommender Solution gives an automated way to manage a maximum risk free portfolio with visualized interface. The solution enables investor to decide when to buy or sell a specific share and provides its current index fund. The system plays the role of passive index fund and tracks the behavior of the stocks by analyzing and predicting, using proper algorithm.



STUDENTS

- Suaad AlMarzooqi
- Shamma Mohamed Al Mansoori



SUPERVISOR

- Dr. Samar Shilbayeh

HANDWRITING RECOGNITION USING AI NEURAL NETWORK

Cohort: July/Spring 2019 | Project Date: September 2019



INTRODUCTION

Handwritten digits and characters recognitions have become increasingly important in today's digitized world due to their practical applications in various day to day activities. The current project is based on development of a model that reads handwritten digits, characters, and words from the image using the concept of Convolution Neural Network.



STUDENTS

- Sara Aqab Baomar




SUPERVISOR

- Dr. Muhammad Usman Tariq



PUBLICATION DETAILS

 **Published** – Aqab S., & Tariq, M.U. (2020). Handwriting Recognition using Artificial Intelligence Neural Network and Image Processing, International Journal of Advanced Computer Science and Applications, 11 (7). 137-146.



<https://bit.ly/3sew6ud>

EMPLOYEE RETENTION PREDICTION

Cohort: July/Spring 2019 | **Project Date:** September 2019



INTRODUCTION

Employee retention is an activity that starts at the top of every organization. The human resource department performs the function of hiring, sourcing, and retaining motivated employees. Retaining and sourcing for new employees requires recognized, focused, and comfortable procedures and policies, which makes retention a key management outcome.



STUDENTS

- Safeya Mubarak Binzawbaa
- Khaled Khamis Al Shehhi



SUPERVISOR

- Dr. Abdullah Abonamah



PUBLICATION DETAILS



Published - Khaled, A., Safeya, B.Z., Abdullah, A.A., Muhammad, U.T. (2021). Employee retention prediction in corporate organizations using machine learning methods. Academy of Entrepreneurship Journal, 27(2).



<https://bit.ly/3kjD5i3>

ACADEMIC ADVISOR

Cohort: July/Spring 2019 | **Project Date:** September 2019



INTRODUCTION

This project focused on development of a model trained by deep learning to detect various mood of participants in order to identify their subject areas of interest so that they can advise and guide the students in selecting right Courses when they are seeking admission to college.



STUDENTS

- Mouza Mohammed Al Shareef
- Zainab Taher Baomar



SUPERVISOR

- Dr. Samar Shilbayeh



Owned by - مملوكة من قبل -



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