SINGAPORE UNIVERSITY OF SOCIAL SCIENCES

ANL488
Business Analytics Applied Project

Pre-semester Briefing 1 June 2021

Agenda

- Introduction
- Project Details
- Using data from data sponsors
- Using data from your company
- ANL488 Supervisors Profile
- List of Projects for Jul 2021 semester
- How to enhance your CV to get the Analytics job that you want?
- Question & Answer

Aims of ANL488

- Conceptualise and conduct a business analytics project of relevance to what is practiced in industry.

- Utilise knowledge and skills learnt in a project environment and apply appropriate data mining techniques for generating useful inputs for business decision making.

What type of project?

- Application and implementation of one or more data mining techniques taught in the business analytics programme (e.g., association, clustering, predictive modelling, web mining, text mining and current issues, etc.), or combining various techniques into a data mining solution for a specific problem.

- Development of new analytical methodology. In this case, the proposed topic must be related to one or more of the topics discussed in the programme, but must not be simply a summary of the materials covered in classes or the provided readings. The objective of such a project is to go beyond the class materials and examine one of the topics in a much more in-depth manner.

List of Past Student Projects

Semester	Project Title	Industry
Jan-11	Customer Opinion Mining: Apple iOS Navigation Applications	IT
Jan-11	Text Mining Vehicle Safety Compliant Data for Root Cause Analysis and Safety Results	Transportation
Jan-11	Web Mining on SIM University Blackboard Learning Management System	Education
Jan-11	Opinion Mining on Tripadvisor Hotel Reviews for Singapore Hotels along Orchard Belt	Hospitality
Jan-11	Text Mining on Car Review	Transportation
Jan-11	Text Mining on the Patient Vaccine Records	Healthcare
Jan-11	The use of Text Mining to Analyse Employee Input	Human Resource
Jan-11	A Business Strategy for a Men's retail outlet through data mining	Retail
Jan-11	Text Mining on Corporate Travel Feedback - Complaints	Hospitality
Jan-11	Application of Data Mining Techniques on Target Selection in Direct Marketing	Retail
Jan-11	Opinion and Sentiment Mining on call logs in an Educational Institution	Education
Jan-11	Data Mining on Caravan Insurance Data	Insurance
Jan-11	Sentiment Analysis for HardwareZone Forum - A Text Mining Approach	Education
Jan-11	A general approach to one-class classification	Academic
Jan-11	A Predictive Analysis on Digital Camera Lens Quality	Manufacturing
Jan-11	A data mining analysis of end-of-life care and a good death	Healthcare
Jan-11	Improving Data Quality through Data Mining	IT
Jan-11	Research Conference Ranking: A predictive analysis using a data mining approach	Academic
Jan-11	A novel supervised wrapper approach for unsupervised feature selection	Academic
Jan-11	Active Learning of Classifier by Clustering Approach	Academic
Jan-11	A Study of the Determinants of the Per Square Foot (psf) Prices of "The Sail @ Marina Bay" using Data-Mining	Property
Jan-11	The Demand for MMORPGs and Substitutes	Gaming
Jan-11	Knowledge Discovery From the Examination and Survey Results	Education
Jan-11	What made some Massively Multiplayer Online Role-Playing Games more popular than others	Gaming
Jan-11	Text Data Mining on The Staits Times (Singapore's) Opinion regaring Unemployment Rate (Singapore)	Government
Jan-11	Data Mining Model To Predict Pupils' Academic Performance	Education
Jan-11	Reducing Business Travel Costs	Transportation
Jan-11	Performance for Individual District on Apartments and Condominiums	Property
Jan-11	Prediction of employment changes	Government
Jan-11	An Analysis of Singapore's Fertility Rate and the Contributing Factors: The Plan B- for Babies	Government

List of Past Student Projects

Semester	Project Title	Industry
Jul-10	Car Buyer's Preferences & The Environment	Automobille
Jan-10	Data Mining in Collections	Banking
Jul-10	Investigating the Experience of Nsmen in ICT	Defence
Jul-10	Post ICT Survey Analysis	Defence
Jul-09	Web Mining of UniSIM Website	Education
Jan-10	Predicting DMS Student's Choices in Choosing SMGE for their Tertiary Education	Education
Jul-10	Web Mining for SIM Website	Education
Jul-10	Web Usage Mining for UniSIM Blackboard Service	Education
Jul-10	Factors Affecting Students' Academic Performance	Education
Jul-10	Using Data Mining Techniques to Predict Stock Movement	Financial
Jan-10	Predictors for healthcare-Acquired Infections in an Acute Hospital	Healthcare
Jan-10	Analysis of Cardiovascular Risk Factors Leading to Rehospitalisation	Healthcare
Jul-10	Predicting the Presence of Heart Disease Using Data Mining Techniques	Healthcare
Jan-10	Data Mining Customer Feedback for Business Improvement in the Hotel Industry	Hospitality
Jul-10	Fraud Detection in Automobile Insurance	Insurance
Jan-10	Prognostic Maintenance on the Engine System	Manufacturing
Jan-10	Quality Mining - Application of Data Mining for Quality Improvement	Manufacturing
Jan-10	Demand Forecasting for Notebook Service Parts	Manufacturing
Jan-10	Data Mining of Portugal's Vinho Verde Wine Quality	Manufacturing
Jan-10	Data/Text Mining in Community Policing	Police/Security
Jul-10	Forecasting Power Tariff	Power
Jul-09	Know Your Customer, Serve It Right and Earn It	Property
Jan-10	Predicting HDB Resale Price - A Data Mining Approach	Property
Jan-10	Data Mining for an Optical Chain	Retail
Jan-10	Time Series Forecasting for a Supermarket	Retail
Jan-10	Text mining on Customer Feedback in a Public Transportation Company	Transportation
Jul-10	Performing Automatic Attribute Selection in Unsupervised Learning	

General Introduction

- 10 cu
- Two full semesters but can be finished in one provided standards are met
- Contact your assigned supervisor regularly
- Meet at least 5 times (excluding the presentation)
- Plagiarism is not tolerated
- Adhere to all deadlines

Assessments

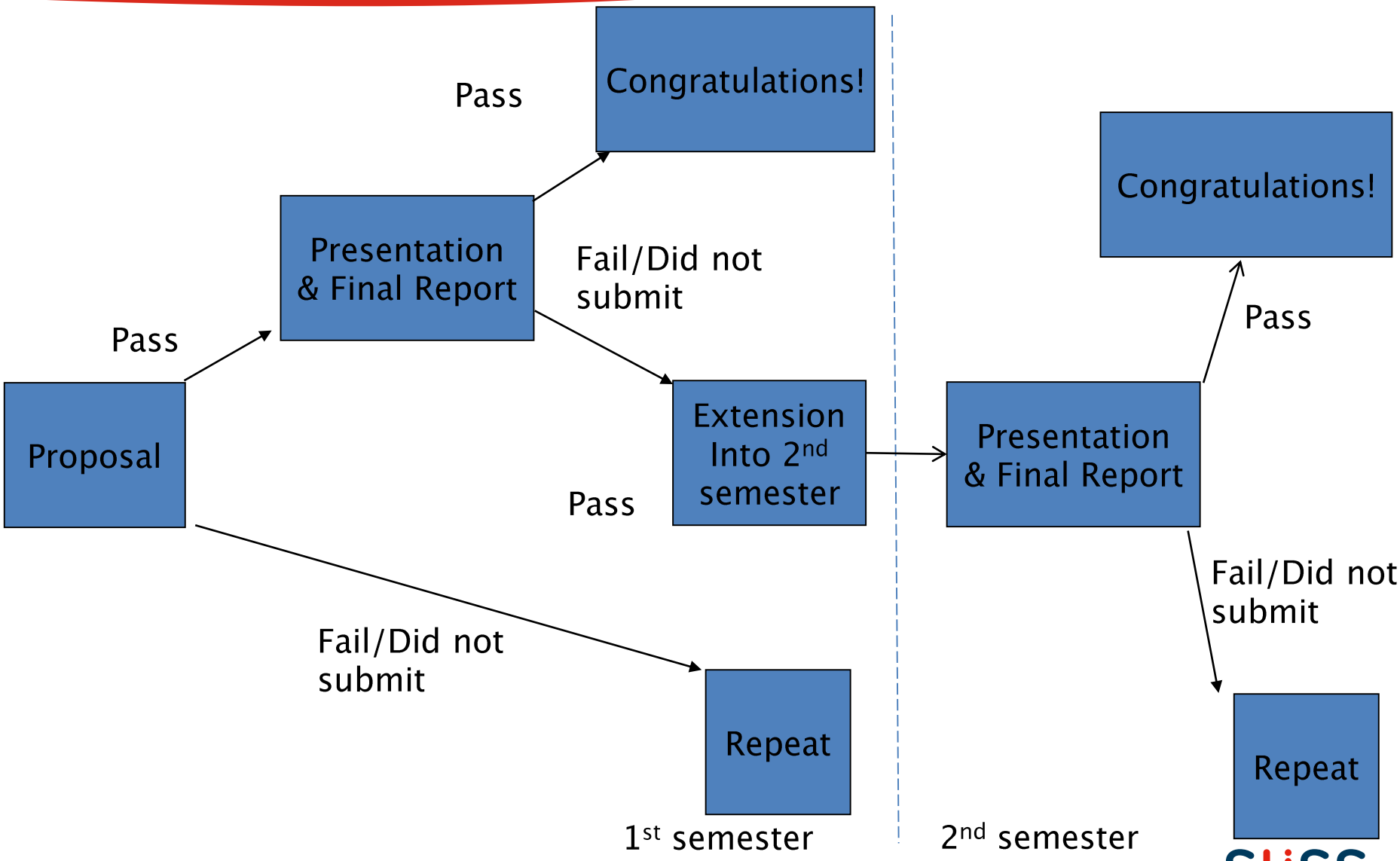
- Project Proposal Report (20%)
- Presentation (20%)
- Final Report (60%) **(ONLY <u>ONE-TIME</u> SUBMISSION ALLOWED)**

To gain at least a PASS (or credit) students have to:

a. Achieve at least 40% for the Project Proposal Report; [OCAS]
b. Achieve at least 40% Final Report; plus Presentation (attended in person) [OES]

All marks contribute to a single final rank score, from which a Letter Grade will be awarded as the Course Result.

ANL488 Business Analytics Applied Project Flow



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Supervisor's role

- provide academic guidance and direction.
- not to enforce English or grammar standards.
- can extend advice to the student but it is up to the student to accept such advice.

  (students should consider the supervisor's advice seriously)

Student's Role

- Responsible for the final outcome of their own projects.
- All citations, references and fieldwork as well as the project are the sole responsibility of the student.
- It is the student's responsibility to ensure that all copyrights are properly observed and where necessary, appropriate permissions are granted. This includes seeking permission from any authorised person(s) or organisation for the use of data by using the **Non-Disclosure Agreement(NDA) found in Appendix D of the ANL488 Student Handbook.**
- Submit your NDA to your supervisor/Mechelle by noon, 16 August 2021.
- If you need an official introductory letter from SUSS on your intent to get data, email Mechelle to get official letter signed by HoP.
- Adhere to deadlines.

Final Report Requirements

- be no more than 10,000 words (40 pages at 250 words per page).
- be double-spaced.
- use Times New Roman font at 12 cpi.
- include all references and sources.
- have the total number of words written in (brackets) at the bottom of the last paragraph of the last chapter, but before the References.
- have the paragraphs justified.
- Use APA referencing style

Deadlines

- Supervisor/topic assignment: 18 Jun 2021
- 1st seminar (1st week): 26 July 2021
- Proposal (4th week): 12 noon, 16 August 2021
- Presentation (9&10th week): 20 September – 25 September 2021 (9am to 9pm) – **make sure you are available this week, exact schedule TBC.**
- Final Report Submission (week 16): 12 noon, 8 November 2021

Two sources of obtaining data for project

Data obtained by students for the Business Analytics Applied Project

- City Optics
- Geylang Methodist Primary School
- SBS Transit
- NTUC Fairprice
- Mayflower Secondary School
- BCA
- JTC

Two sources of obtaining data for project

Data sponsors:

- Defence Psychology Department, MINDEF
- Ministry of Manpower
- Health Science Authority
- Singapore General Hospital
- Lien Centre for Palliative Care, Duke-NUS Medical School
- Sembawang Primary School
- Khoo Teck Puat Hospital
- Mediacorp

Internship for student projects

- Auditor-General Office

Using data from data sponsors

Business Analytics Applied Project

- Business analytics undergraduate with prior working experience
  - Client-stipulated business objective
  - Apply business analytics techniques to existing data
  - Report previously unknown patterns of data to solve business problem
- Project supervision by Singapore University of Social Sciences full-time or associate faculty
- Project duration of about 4 months
  - July 2021 to December 2021
    - Final Presentation after 29 November (Exams)
- Deliverables
  - Problem Identification
  - Project Methodology
  - Project Proposal Writing
  - Project Planning & Establishing Milestones
  - Analysis and Recommendations
  - Project Report Writing
  - Project Presentation

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Benefits of Business Analytics Project

- Project Resources
  - Experienced team of project supervisors to guide the Business Analytics project efforts
  - Student resource to undertake the entire project scope from data preparation to modeling and reporting
  - Student using enterprise-grade analytical tools
- Structured Methodology
  - CRISP-DM; cross-industry data mining methodology that students will follow and systematically work through to meet the stipulated business objective
    - Structured Mechanics
    - Reporting Protocol
    - Data Security Measures
      - Non-Disclosure Agreement
      - Masked Data

Requirements

- Participating Company
  - Commitment
  - Assigned Liaison Personnel
  - Provision of Business Objective
  - Facilitate in Business & Data Understanding
  - Supply of Data
  - Assist in Data Preparation
  - Meeting Attendance
  - Clear Expectations of Student's Capability & Project Deliverables
  - Agreement for Student to Work Remotely on the Project

Project Timeline Jul 2021 (using sponsored data)

- Critical Milestones

By 31 Jul 2021

Meeting A

- **Defining Project Objectives & Scope**
- **Reporting Protocol**
- **Exploratory Discussion of Data**
- **Administrative Matters (E.g. NDA)**
- **Release of Data to Student**

By 31 Aug 2021

Meeting B

- **Presentation by Assigned Student**
- **Project Proposal**
- **Project Milestones**

By 30 Sep 2021

Meeting C

- **Project Review 1**
- **Business Understanding**
- **Data Understanding**
- **Data Preparation**
- **1st Round of Modeling & Findings**

Project Timeline Jan 2021 (using sponsored data)

- Critical Milestones

By 31 Oct 2021

Meeting D

- **Project Review 2**
  - **Modeling**
  - **Evaluation**
  - **Recommendations for Deployment**

As data mining process is dynamic & cyclical, discussion on the earlier stages may be required

After 30 Nov 2021

Meeting E

- **Final Presentation**

Deadlines(using sponsored data)

- Supervisor/topic assignment: 18 Jun 2021
- 1st seminar (1st week): 26 July 2021
- Proposal (4th week): 12 noon, 16 August 2021
- Proposal presentation to sponsor: By 3 September 2021
- Presentation (9&10th week): 20 September – 25 September 2021 (9am to 9pm) – **make sure you are available this week, exact schedule TBC.**
- Final Report Submission (week 16): 12 noon, 8 November 2021
- Final presentation to sponsor: From 29 November 2021

Using data from your company

Why use Company data?

- Company's data is best analysed by its own staff
- No concern of transmitting (or revealing) data to external party
- Analysis can be carried out within the company
- The student (also the staff) knows the business context (hence more productive)
- Company contributes to society by allowing for SUSS students to work on an industry-relevant projects
- The project will be guided by supervisors who have real-world analytics experience

Potential benefits of this analytics project

(Students need to be very clear on this)

- Example:
  - Help shape customer behaviours
  - Improve profit by increasing response rate
  - Put in place fraud detection technology that leads to fraud deterrence
  - Leads to a better understanding of customer requirements
  - Identify key issues faced by customers

Potential data required for this project

- Example:
  - Customer call log
  - Customer sales transaction data
  - Customer records
  - Machine instrumentation data
  - Factory production data
  - Testing records

How to avoid divulging sensitive organisation information?

- Can use less sensitive data if needed
  e.g., Customer records vs Queuing data
- The student work on the data and generate the models and report the results to the supervisor
- The supervisor does not need a copy of the data
- Can use a mock data set that contain fictitious data for the purpose of project discussion
- No need to submit the actual dataset as part of the project submission
- Final report will be read by your supervisor, second marker, and may sometimes be read by external examiners, who are all academics
- Final report can also be embargoed so that no members of the public can access the report

Communications

- use SUSS email to communicate with their supervisors and staff of the University.
- Any changes to the Course, its outline and project submission deadlines will be posted on the Canvas. It is the student's responsibility to be aware of the information.*
- Students should take note of all announcements made in the Canvas, via emails and in seminar*.
- Expect to spend at least 15 hours per week for this course.

* From now till 26 July 2021, communicate via email/announcements on Canvas -> Courses -> BSc in Business Analytics.

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iBookstore
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Marked Assign-ments
Grades
UniSIM Gradebook

ANL488 Pre-semester briefing 28 Nov2017

LEE YEW HAUR

Here are the needed material:

Student Projects Description_Jan_2018_Verfinal.pdf

ANL488 Business Analytics Applied Project - 28 November 2017 Briefing-

ANL488 BUSINESS ANALYTICS APPLIED PROJECT - Course Handbook _

Sample NDA.docx

This announcement is closed for comments

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ANL488 Handbook

- Available at email/announcements on Canvas -> Courses -> BSc in Business Analytics.
- Can be found in ANL488 L group in Canvas. Check at beginning of semester to see if there is a new version.

ANL488 Supervisors Profile

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SUSS full-time faculty: A/P Lee Yew Haur

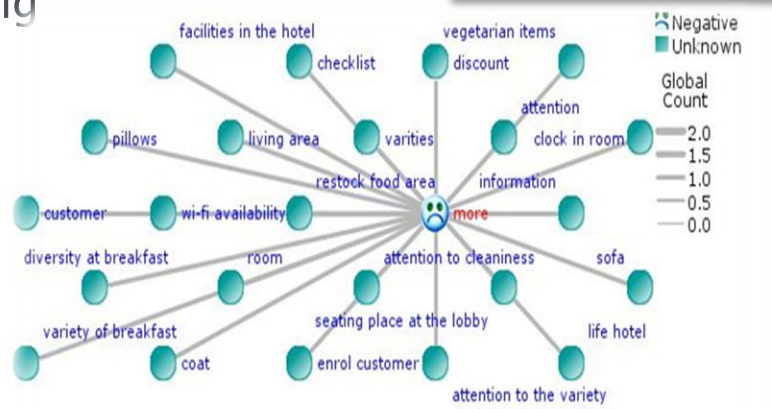
Email: leeyh@suss.edu.sg

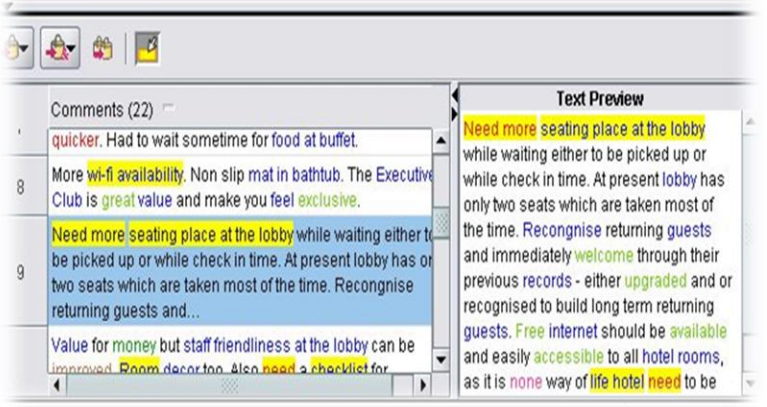
Research Areas:

- Business Analytics – Data Mining, Text Mining and Web Mining

Research Projects/Initiatives:

- Application of Data Mining in the Manufacturing Sector
- Application of Text Mining in Customer Relationship Management
- Web Usage Mining of Students Behaviour in Blackboard





Conversant in both IBM SPSS Modeller and SAS Enterprise Miner. Taught ANL311/315.

Only meets on Monday night.

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SUSS full-time faculty : A/P James Tan

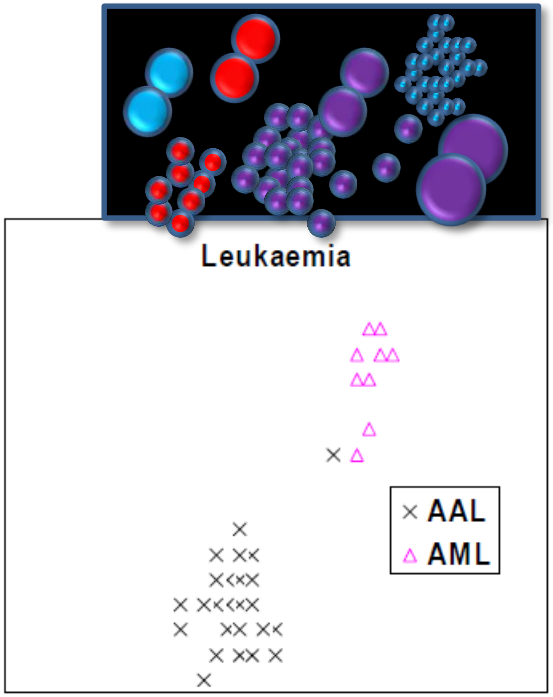
Email: jamestansc@suss.edu.sg

Research Areas:

- Business Analytics – Data Mining

Research Projects/Initiatives:

- Applications of data mining
- Data Visualisation
- Data Stream Mining for Anomaly Detection
  (Research with collaborators from CSIRO, Australia
- Fast Anomaly Detection in Evolving Data Streams
  (Funded by US Air Force of Scientific Research)
- Ensemble of Stable and Unstable Learners
  (Funded by Monash University)



Conversant in IBM SPSS Modeller. Taught ANL303/305/307/311.

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SUSS full-time faculty: Dr Meilin Zhang

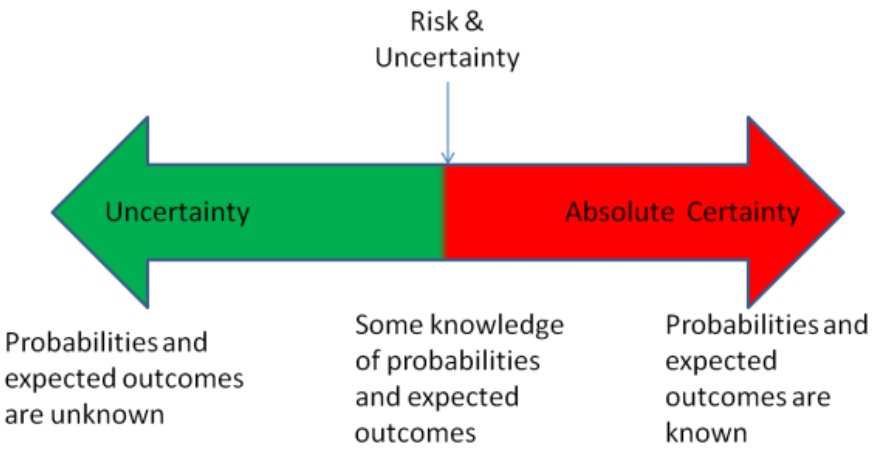
Email: zhangmeilin@suss.edu.sg

Research Areas:

- Decision Making under Uncertainty, Healthcare Analytics, Robust Optimization, Large Scale Computation
  (Conversant in R, Python, Matlab, Cplex, Stata, SAS, MySQL, C++)

Research Projects/Initiatives:

- Adaptive Robust Linear Optimization (dynamic/multi-stage decision making)
- Robust Repositioning for Vehicle Sharing
- Patient Flow Control for Emergence Department (ED)/Frequent Returning ED patients
- Resource Allocation under Uncertainty (e.g., hospital wards, sharing vehicles)



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SUSS full-time faculty: A/P Nicholas Sim

Email: nicholassimcs@suss.edu.sg

Research Areas:

- Business Analytics – Statistics, Regression Analysis, Econometrics

Research Projects/Initiatives:

- Application of statistical and regression analysis to political economy, economic development, finance and climate change
- Modeling with quantile regression

Preferred statistical software: R and STATA. Course developer of ANL321 Statistical Methods. For latest research, please see https://ideas.repec.org/f/psi516.html

Available on Tuesday morning.

SUSS full-time faculty: Dr Karl Wu

Email: karlwuky@suss.edu.sg

Research Areas:

- Statistics – Statistical Modelling, Generalised Linear Models, Joint Mean and Dispersion Effects Models and Time Series Analysis.

Research Projects/Initiatives:

- Application of joint mean and dispersion effects models in social science, medical and environmental studies.
- Application of time series analysis and generalized linear models in longitudinal medical and biological studies.
- Programming of R packages for statistical analysis.

Conversant in IBM SPSS, SAS and R.

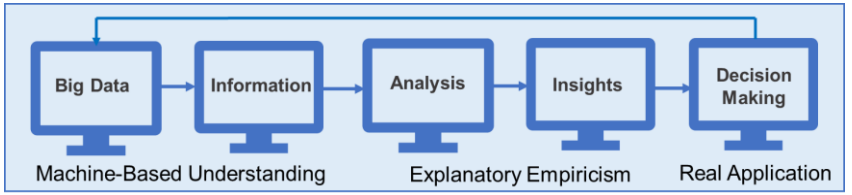
Only meets on Wednesday night.

SUSS full-time faculty: Dr Ren Jing

Email: jingren@suss.edu.sg

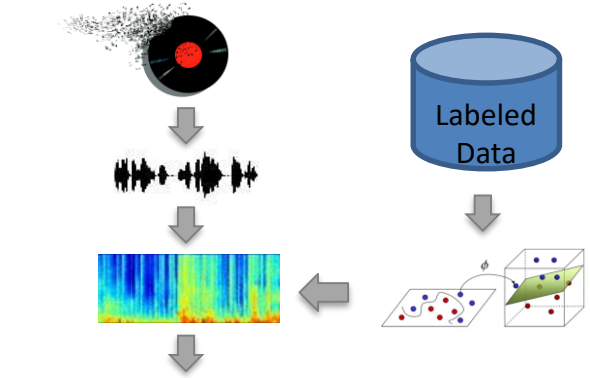
Research Areas:

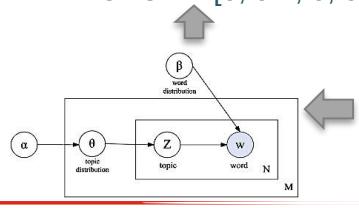
- Business Analytics – Data Mining, Text Mining
- Machine Learning, Recommendation
- Social Media



Research Projects/Initiatives:

- Combination of Machine Learning and Econometrics in Social Media Analysis and Recommendation
- Application of Data Mining and Text Mining in Customer Relationship Management





(Tears are gonna fall, rolling in the deep)
You had my heart inside of your hand
(You're gonna wish you never had met me)
And you played it, to the beat
(Tears are gonna fall, rolling in the deep)

Conversant in machine learning and data analytics tools such as Weka, SAS, R, Teach ANL305/311.

Contact day/time: Monday 4:00 – 7:00 pm
Tuesday 4:00 – 6:00 pm

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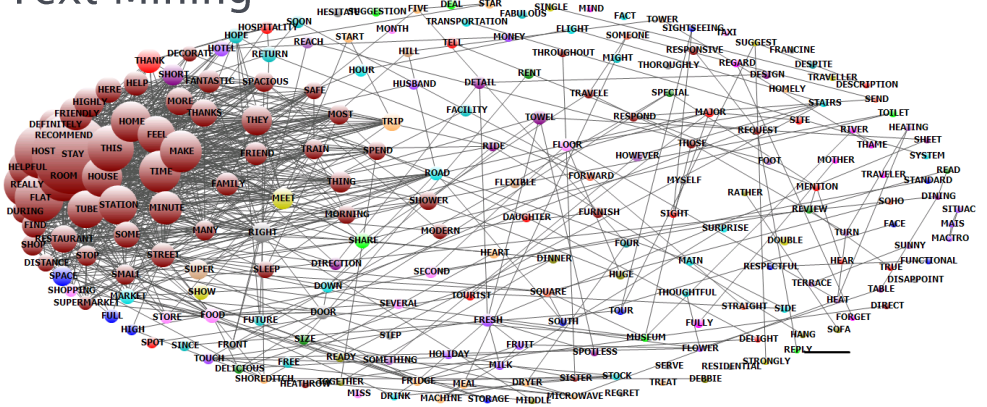
SUSS full-time faculty: Dr Carmen Lee

Email: carmenleekh@suss.edu.sg

Research Areas:

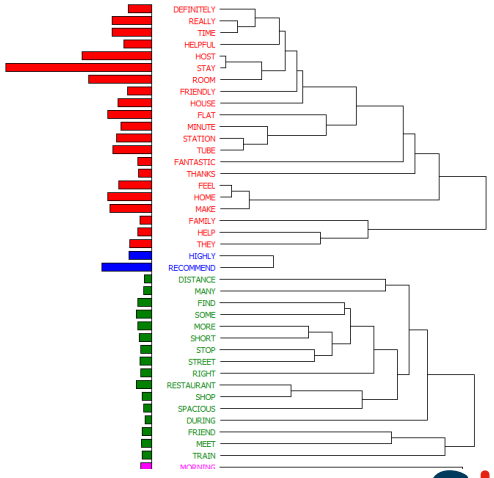
- Business Analytics – Data Mining, Text Mining



Research Projects/Initiatives:

- Application of Data Mining in Manufacturing/Service Sector

- Application of Text Mining in Understanding Customer Behavior



SUSS full-time faculty: Dr Zhang Yimiao

Email: yzhang@suss.edu.sg

Research Areas:

Business Analytics – Data Mining and Text Mining

Online Consumer Behavior

User-generated Content

Research Projects:

- Attention in social media: Strategies to sustain users' attention
- Online reviews: Impacts on consumer perception changes and transaction failures
- Quantifying the value of online influencer endorsement on product sales

Relevant Tools:

IBM SPSS Modeller, IBM SPSS Statistics, Python

Taught ANL311

Normally only meet in the daytime by appointment

SUSS full-time faculty: Dr Liu Wenting

Email: wentingliu@suss.edu.sg

Research Areas:

- Business Analytics
- Machine Learning
- Statistical Analysis
- Optimisation Modelling
- Knowledge Management

Research Projects/Initiatives:

- Application of Machine Learning in Consumer Research
- Application of Optimisation Modeling in Pricing Strategy

Conversant in R, Python and KNIME platform.

Only meets on Friday.

SUSS full-time faculty: Dr Alfred Koh

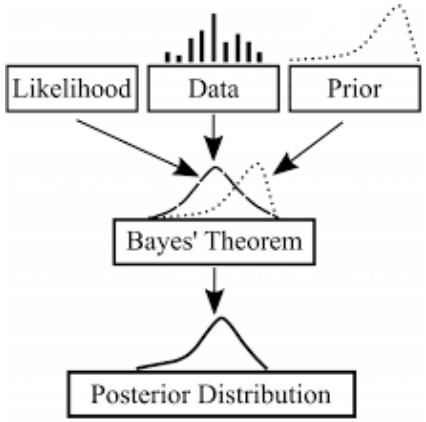
Email: alfredkohpy@suss.edu.sg

Research Areas:

- Marketing Research and Analytics
- Applied Microeconomics
- Machine Learning

Research Projects/Initiatives:

- Interplay between Initial Consideration Set and Comparison Sites in Consumer Search
- Detecting Interactions: A Machine Learning Approach



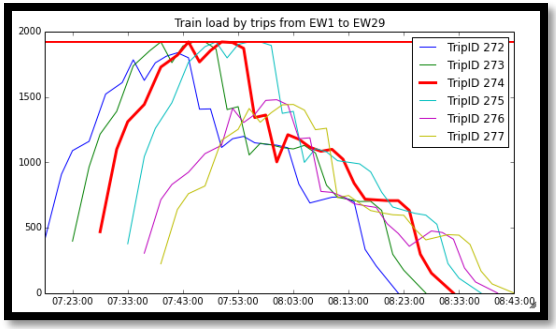
Conversant in R, Stata and Python. Teaching ANL 252 in coming semester.

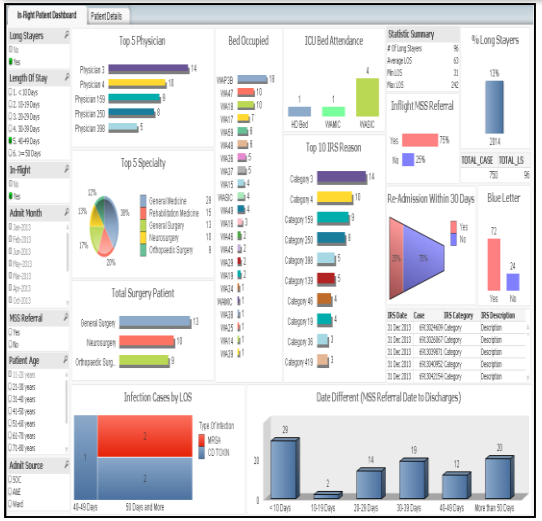
Monday nights only; exceptions on a case-by-case basis

SUSS full-time faculty: A/P Ma Nang Laik (BUS)

Email: nlma@suss.edu.sg

Research Areas: Operations Research, Simulation, Data Analytics, Decision support systems in transportation and logistics, Resource allocation,





Research Projects/Initiatives:

- Optimization approach for Singapore transport system
- Resource optimization in container terminal, airport and business
- Predictive analytics for airline, no show for airport
- Large-scale application of simulation system

Conversant in IBM SPSS Modeller and SAS Enterprise Miner, Excel.

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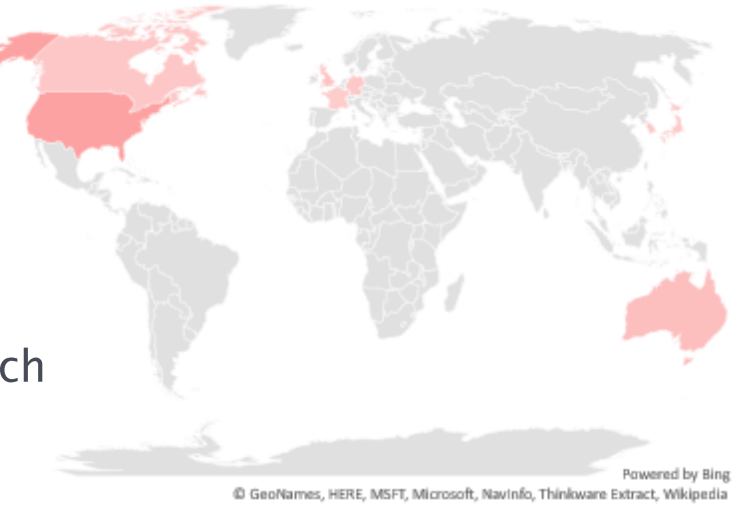
SUSS full-time faculty: Dr Shi Lirong (FIN)

Email: lshi@suss.edu.sg

Research Areas:

- Using both traditional and interdisciplinary approaches to analyse complex business problem, especially in areas of Corporate Valuation, Financial Reporting, Corporate Governance, Overseas IPO, Managerial Attributes
- The primary geographic focus of my research is Singapore, China, U.S. and International.



Research Projects/Initiatives:

- Analysis on corporate valuation
- Analysis on stock exchange's behavior
- Analysis on managerial attributes on firm behavior

Teach ANL252 Python for Data Analytics and ANL351 SAS Programming and its Application.

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Associate: Dr Tan Khay Boon

Email: tankhayboon@sim.edu.sg

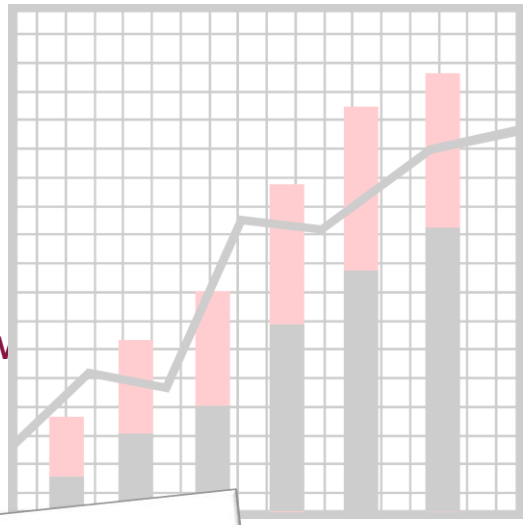
Research Area:

- Role of Financial Sector in Economic Development
- Causal Effect in Econometrics and Time Series Analysis
- Econometric Modelling
- Time Series Forecasting

Research Projects/Initiatives:

- Does Foreign Direct Investment Promote Economic Grow
  Series Approach
- Companies Case writing
- Forecast demand and wages

Taught ANL302



Associate: Mr Edwin Seng

Email: Edwinseng001@suss.edu.sg

Edwin is Head of Market Development at an Analytics software company where he provides expertise within the area of Customer Analytics, Behavioural Segmentation and Churn Analytics.

Topics:

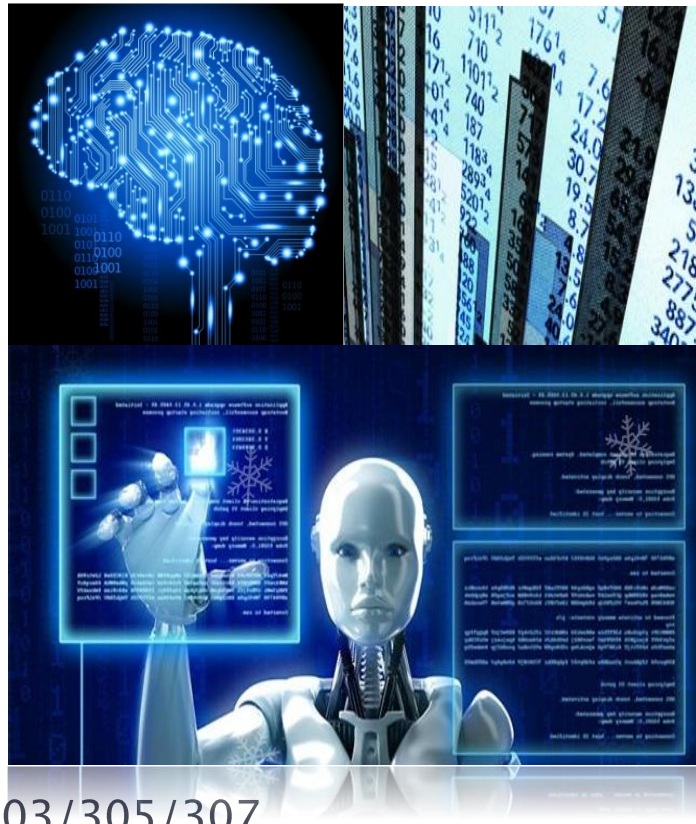
Customer Analytics, Behavior Segmentation and Churn Analytics

Conversant in both IBM SPSS Modeller and SAS Enterprise Miner.

Associate: Dr Tung Whye Loon

Email: wltung001@suss.edu.sg

Data Scientist, Analytics Centre of Excellence, DBS Bank



Research areas:

- Data Analytics, Machine Learning, Computational Intelligence & Computational Finance, Location Analytics, Anomaly Detection

Research Projects/Initiatives:

- Application of Data Analytics to Contextual Marketing/Recommender System
- Predictive portfolio optimization & trading systems
- Geo-location analytics, Churn/Attrition analytics

Conversant in Python, IBM SPSS Modeller. Taught ANL303/305/307.

Associate: Dr Teh Yong Liang

Email: ylteh002@suss.edu.sg

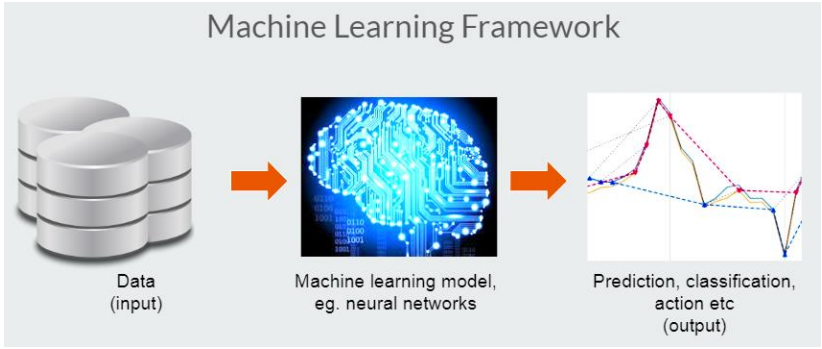
Research Areas:

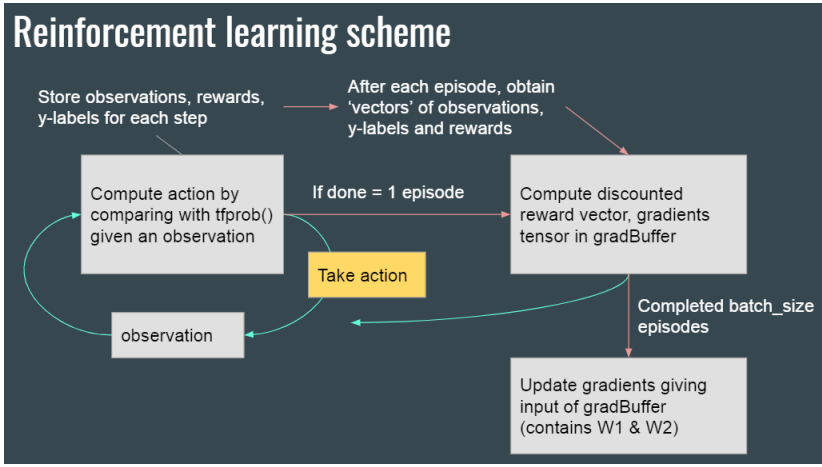
- Business Analytics, Data Mining, Machine Learning, Mathematics

Research Projects/Initiatives:

- Application of Data Mining in Financial Analysis
- Application of Reinforcement Learning in Automated Trading of Financial Assets
- Application of Machine Learning in Automatic Detection of Illegal Smoking Behavior

Proficient in IBM SPSS Modeller and Python programming. Taught ANL251/303/307.





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Associate: Mr Lam Vee Tat

Email: vtlam001@suss.edu.sg

Research Areas of Interest:

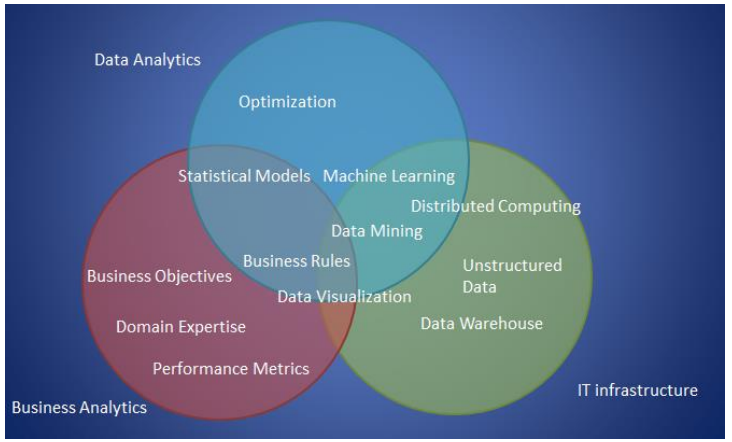
- Business Analytics – Data Mining, Visualization, Statistics
- Optimization, Machine Learning

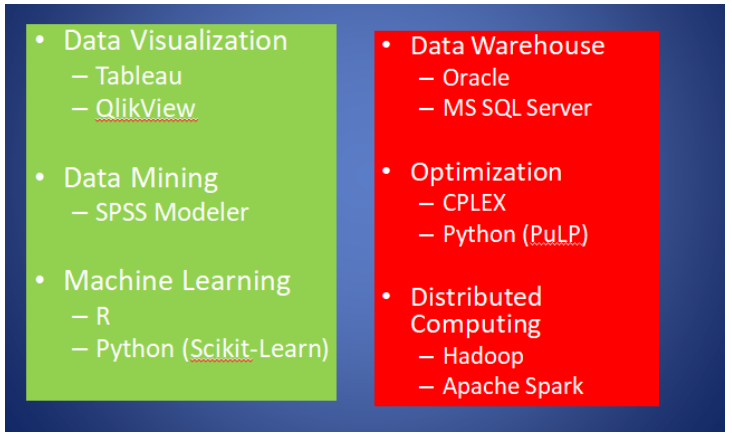
Projects/Initiatives:

- Detection of Trading Misconduct for Equities Markets
- Regression Models for Energy Prices
- Application of Data Mining for Air Logistics
- Application of OR Techniques for Resource Allocation Problems

Experienced in Python, R, Tableau, QlikView, SPSS Modeler and VBA.

Meet on Mondays or Tuesdays.





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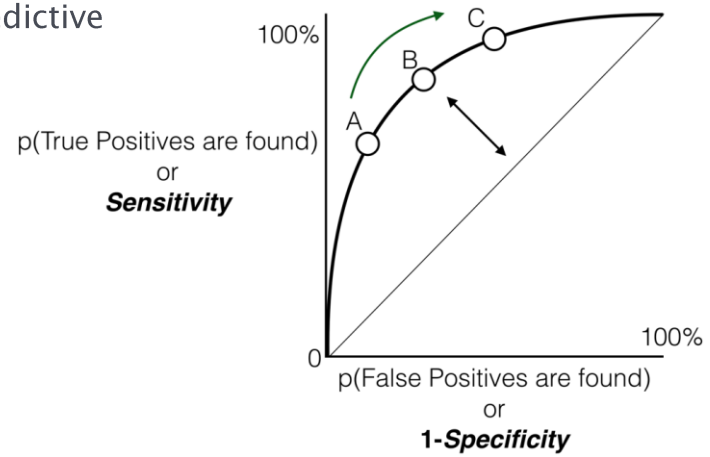
Associate: Dr. Chris Jun Hui Ho

Email: jhho003@suss.edu.sg

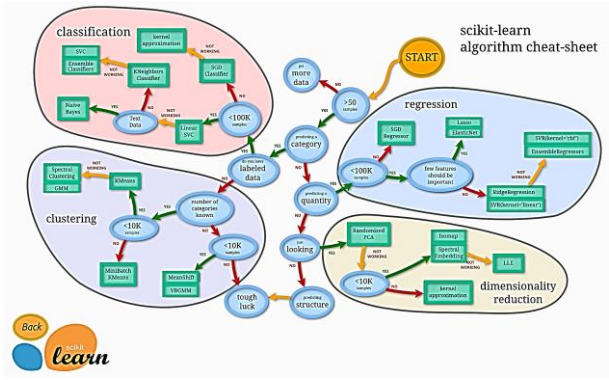
Research Areas:

- Business analytics/statistics
- Data/text mining & processing
- Data visualization & reporting
- Machine learning/Artificial intelligence
- Association analysis/predictive modelling
- Entrepreneurship



Research Projects/Initiatives:

- Time-series prediction & analysis
  - Product revenue
  - Market pricing
  - Stock movements
- Operations management
  - Demand forecasting
  - Process scheduling
  - Resource optimization
- Sentiment analysis/Product recommendations, e.g. e-commerce, movies
- Entrepreneurship
  - Value proposition/Product-market fit
  - Market research & segmentation
  - Go-to-market strategy/Stakeholder analysis
  - Business model & plan/Pitch deck



Proficient in Python, R, MATLAB, Tableau. Taught ANL201/ANL251.

Meets on Mon to Sat mornings.

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Associate: Mr **Victor Yiew**

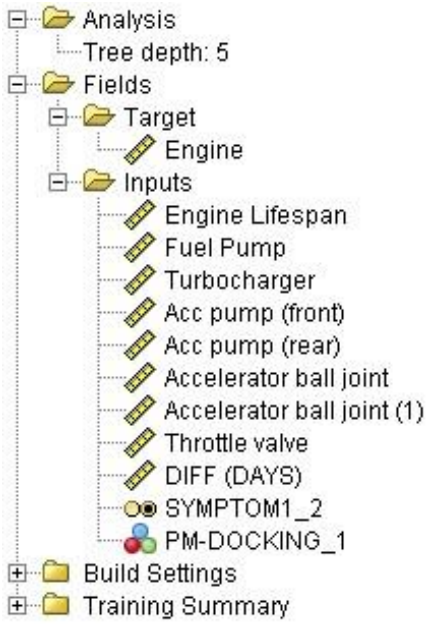
Email: victoryiew002@suss.edu.sg

Special Interest on

- Business Analytics : Data Mining, Text Mining and CRISP-DM Framework
- Business Excellence : Lean Enterprise, Six Sigma, Statistics, Triz, BPM and Coaching
- Operational Excellence : Dashboard, Process Optimization, Productivity, Standardization

Research Projects/Initiatives:

- Prognostic Maintenance on Bus Engine System
- Optimization for Treasury Investment
- GrabFood Delivery Solutions: Food Court Transformation Chronicle
- Smart Education: Service Innovation
- Application of Text Mining on Customer Relationship Management



Conversant in IBM SPSS Modeller, SPSS Statistics, Minitab, RStudio, Tableau Visualization

Lecture ⚓ Projects conducted for ANL201, ANL203, ANL305, ANL307, ANL312, ANL488

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Associate: Mr Oh Chin Lock

Email: cloh001@suss.edu.sg

Research Areas:

- Business Analytics – Data Mining, AI, Deep Learning
- IoT – Edge AI, Smart Sensors, Cloud Computing

Research Projects/Initiatives:

- Application of Data Mining and AI in Healthcare and Medical/Clinical practice
- Application of AI and IoT in Healthcare, Enterprise Digitalization, Industry 4.0

Conversant in both IBM SPSS Modeller , SAS Studio, Python AI libraries.
Taught ANL303, 305, 307, 315.

Meets on Wednesday/Friday night.

http://shining-ai.com

Associate: Mr Paul Seah

Email: paulseah002@suss.edu.sg

Specialised Areas:

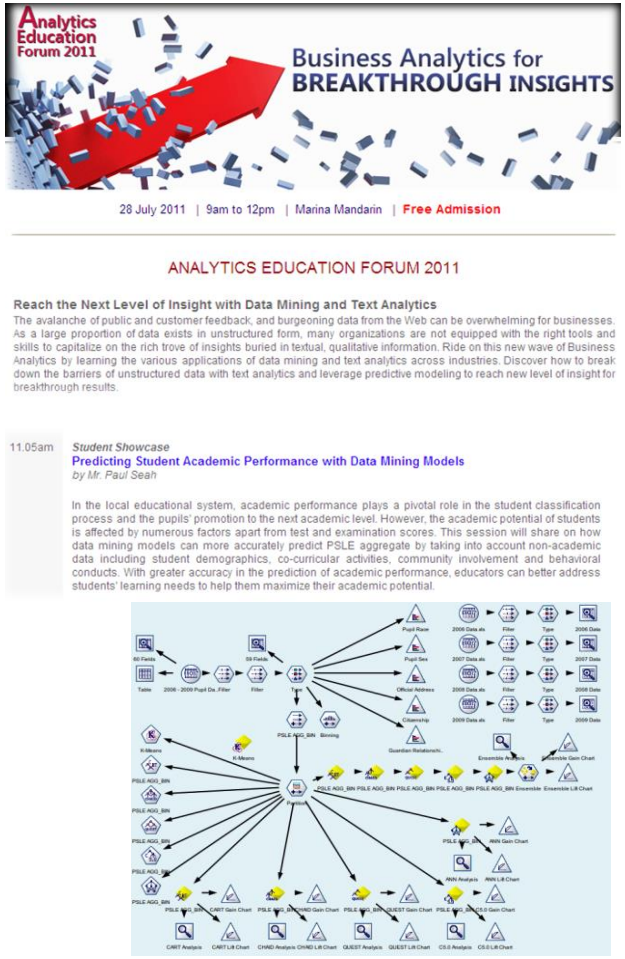
- Business Analytics – Data Mining, Text Mining
- Data Strategy and Data Governance

Applied Research Projects/Supervised Projects:

- Application of Data Mining in the Predicting Students' Academic Results
- Supervised application of Text Mining in Customer Feedback Management

Conversant in IBM SPSS Modeller, Tableau, SAS 9.4 Data Management and SAS Viya.
Course Leader for ANL 203.

Only meets on Monday night.



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Associate: Ms Li Jizhi

Email: jzli002@suss.edu.sg

Research Areas:

- Statistical analysis
- Data Mining (Cluster Analysis and predictive modelling)

Research Projects:

- Application of statistical analysis and Cluster Analysis on care-recipients of insurance agency
- Application of Data Mining in education sector/non-profit organization, profiling/prediction of student performance

Conversant in both IBM SPSS Modeller and R.

Taught ANL303/309.

Preferred meeting time is Mon to Thur evening.

Associate: Mr. Adam Wong

Email: adamwongch@suss.edu.sg

Research Areas:

- Business Analytics – Data Mining, Text Mining and Web Mining
- Learning Analytics

Projects/Initiatives:

- Application of of Data Mining in Education
- Application of Data Mining in CRM
- Social Media Analysis – Application of Text Mining and Web Mining in Movie Reviews from Twitter Data

Conversant in both IBM SPSS Modeller, R, and Qliksense.

Associate: Mr Prasanna Rao

Email: prasannasr@suss.edu.sg

Project Areas:

- Business Analytics – Data Visualization, Dashboard Design and Data Mining

Projects/Initiatives:

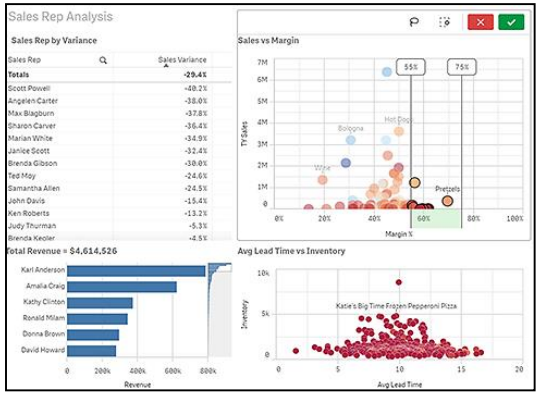
- Data visualization and dashboard design for data analysis in various domains using Qlik Sense & Tableau
- Predictive modeling using IBM SPSS modeler
- Data pre-processing using Python

Certifications:

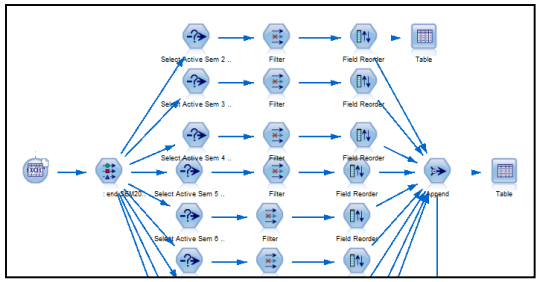
- Tableau Desktop Specialist, QlikView 11 Certified Designer, Data Scientist with Python (AI Singapore)

Only meets on Monday night.

Data Viz & Dashboards



Data Mining



Associate: Dr Wang Di

Email: dwang003@suss.edu.sg

Research Areas:

- Business Analytics – Data Mining, Predictive Analysis, Financial Forecast

Research Projects/Initiatives:

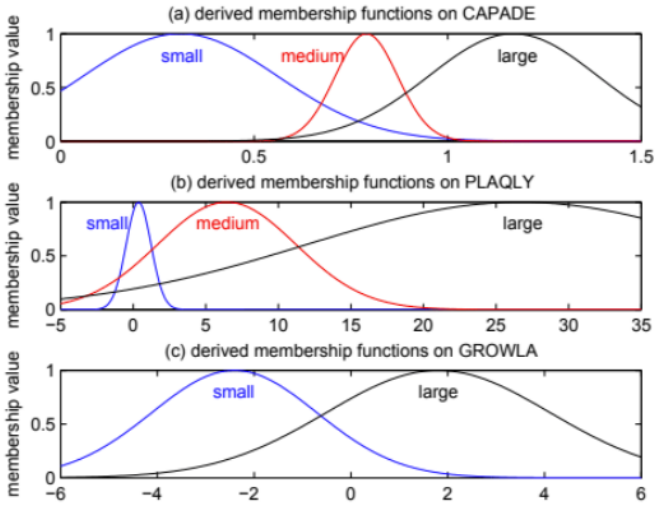
- Application of Data Mining in Health/Medical Areas
- Time Series Mining
- Knowledge Discovery and Representation

Conversant in various programming languages, such as Python, Java, Matlab, C++, etc.

Familiar with various data mining tools, such as Weka, IBM SPSS Modeler, etc.

Taught ANL251 and ANL311

Only meets on weekday nights (by appointment).



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IF CAPADE is large and PLAQLY is medium	THEN
IF CAPADE is small and GROWLA is small	THEN
IF CAPADE is medium and PLAQLY is large	THEN

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Associate: Mr Yao Renjie

Email: rjyao001@suss.edu.sg

Research Interests:

Interpretability of Artificial Intelligence

Area of expertise:

Big Data, Operation, Machine Learning

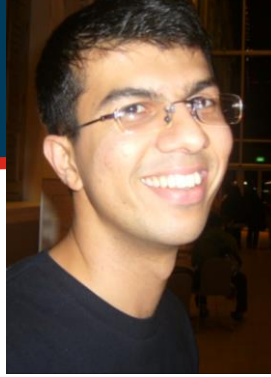
Current employment / industry:

Tech Lead, VISenze

About myself:

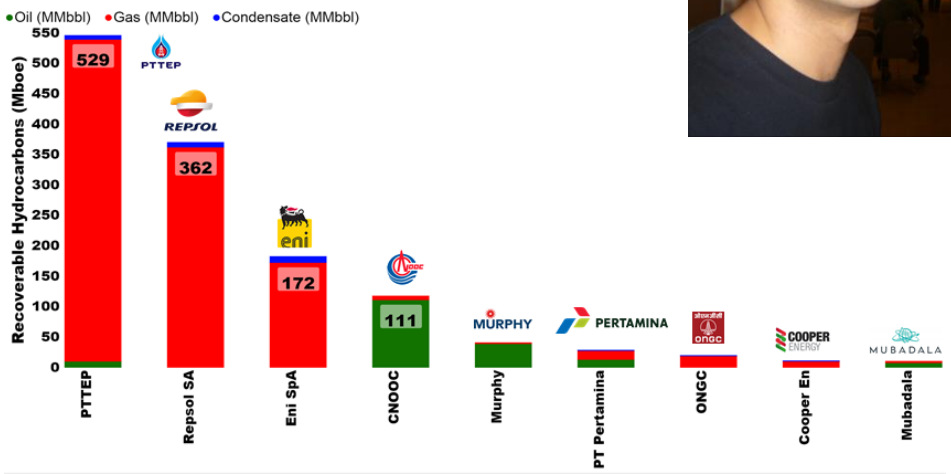
I obtained my Bachelor in Huazhong University of Science and Technology, major in Mathematics and double degree in Computer Science. As a Tech Lead in ViSenze, I am leading multiple teams working on Big Data, Machine Learning Platform and Site Reliability Engineering to help company solve problems and mentor young engineers. I believe that help people learn how to learn is more important than knowledge. And we are learning within all our lifetime.

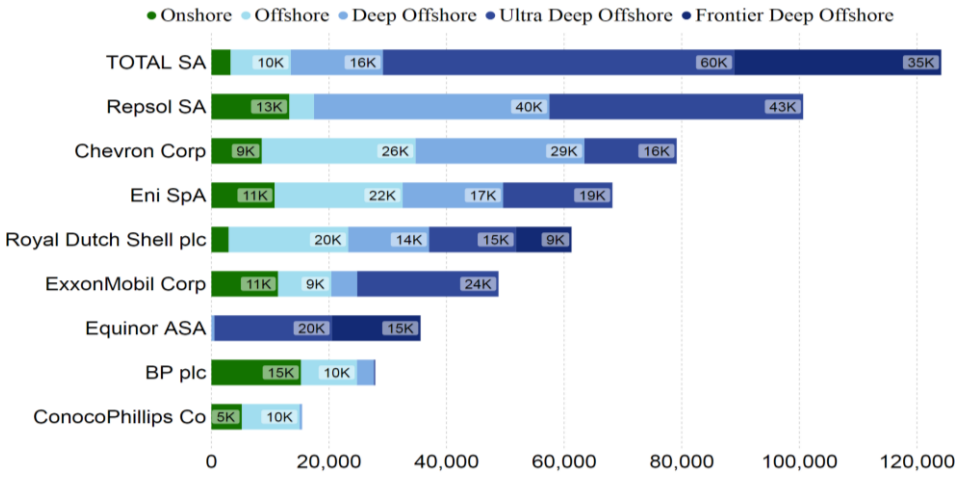
Associate: Dr Munish Kumar



Email: ***munishkumar001@suss.edu.sg***

- **Academic Qualification:**
  - *Ph.D. in Physics, Australian National University*
- **Courses taught at SUSS:** *(Jan 2021)*
  - ANL201 Data Visualisation for Business
- Research Interest/ Projects:
  - Application of Data and visualization in Oil and Gas, Energy, Renewables Sector





Conversant in Power BI & Python.

Only available on Monday night.

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Associate: Mr Chua Poh Chai

Email: pcchua02@suss.edu.sg
LinkedIn: https://www.linkedin.com/in/pohchaichua/
Company: www.samtech.sg

Professional Areas of Interest:
Financial Analytics – Portfolio Analytics, Credit Risk Analytics, Stress Testing and Scenario Analysis

Projects/Initiatives:

- AI-powered Early Warning Systems
- Credit Risk Assessment
- Sentiment Analysis
- Network Relationship Effects/ Knowledge Graphs

Schedule: Case-by-case for each student

Associate: Mr Zhang Shuai

Email: sazhang001@suss.edu.sg

Business Focus:

- Digitalization pipeline development
- Business case study
- Analytics project management

Data Science Experience:

- Data processing & analytics – ETL, EDA
- Modelling – Machine learning, deep learning
- Business intelligence – Tableau, PowerBI

Technical Skills:

Programming

BI tools

Data query

Associate: Dr How Meng-Leong

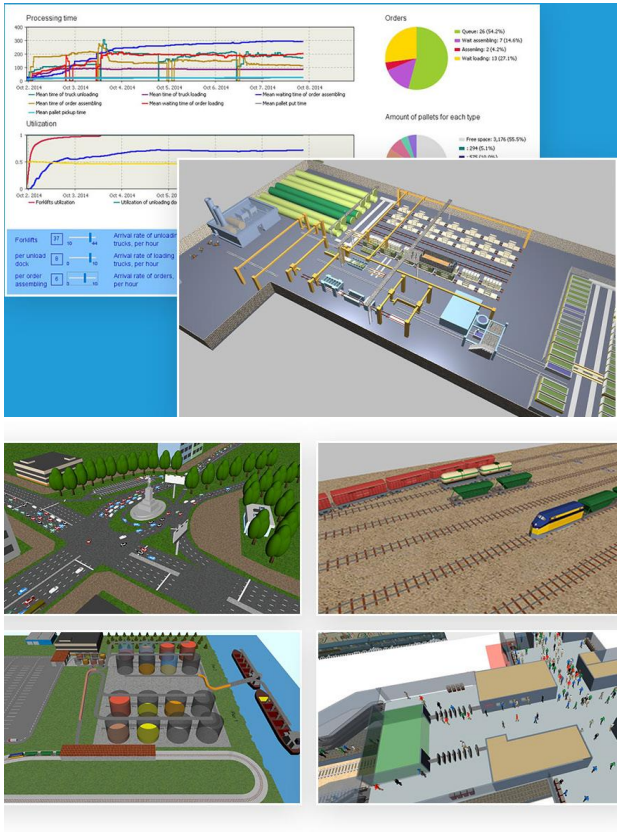
Email: shawnhow001@suss.edu.sg

Research Areas:

- Business Analytics – Computational Predictive Modeling using System Dynamics (SD), 3D Agent-based Modeling (ABM), and Business Process Modeling (BPM) of Digital Twins of Industries.

Research Projects/Initiatives:

- Computational 3D Simulation for healthcare business processes.
- Computational 3D Simulation of cargo and liquid transfer in industries like mining or oil & gas.
- Computational 3D Simulation of rail transportation.
- Computational 3D Simulation of pedestrian flows in airports, stadiums, stations, or shopping malls.
- Computational 3D Simulation of car, truck, and bus movement on roads, parking lots, and factory sites.
- Computational 3D Simulation of manufacturing and warehouse processes.



Conversant in

- Anylogic, Anylogistix, FlexSim & FlexSim Healthcare (the software programs for 3D computational simulations using System Dynamics (SD), Agent-based Modeling (ABM), and Business Process Modeling (BPM)

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Associate: Dr The Benedict

Email: BenedictThe001@suss.edu.sg

Head, Analytics & Business Intelligence, SATS Ltd.

Research Areas:

- Data Analytics & Business Intelligence
- Data Mining & Machine Learning
- Pattern Recognition & Digital Image Processing
- Behaviour Analysis & Cognitive Science

Research Projects/Initiatives:

- Share of voice & consumer sentiment in Social Media Analytics
- Intelligent Character Recognition & Extraction in Automated Forms Processing
- Eye Tracking & Discourse Analysis in Learning Analytics

Skilled in IBM SPSS Modeller, R, Python, Power BI and Tableau. Taught ANL303v

Able to meet for discussions on weekday evenings.

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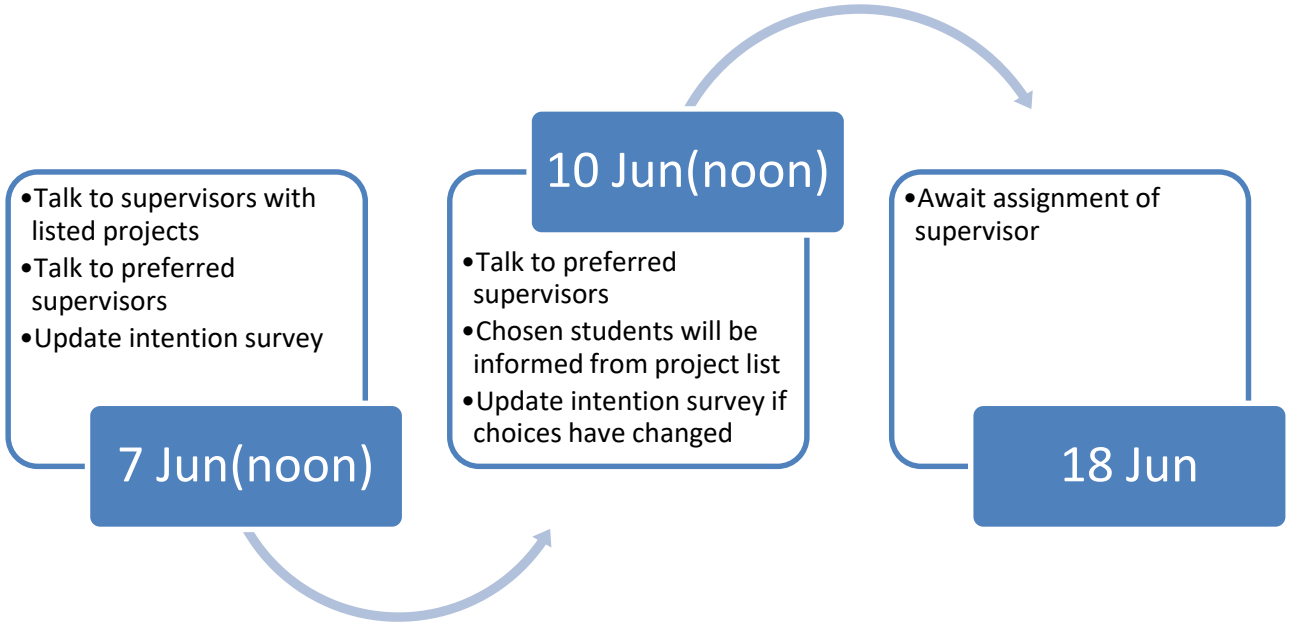
What do you need to do before 18 Jun?



What you need to do after being assigned your supervisor (Taking ANL488 this coming Jul 2021 semester)

- Show supervisor your ANL311/312 ECA for comments on how to improve
- Find an appropriate data set by 1st week of Jul2021 semester
- Conduct a thorough literature review – 3 analytics references
- Improve on technical writing

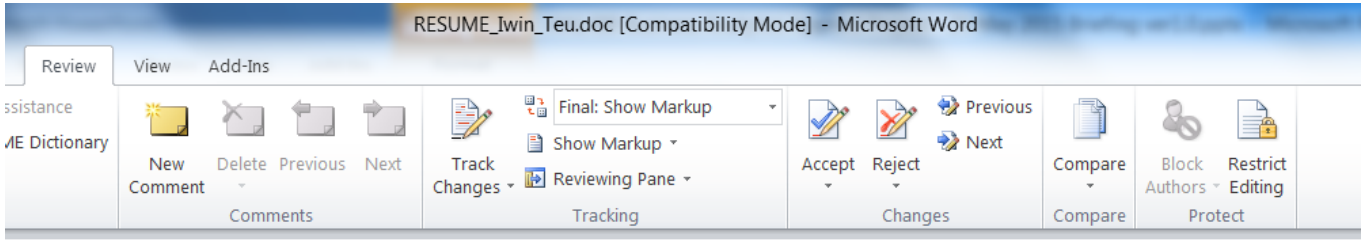
Tips on choosing topics

- Develop Plan A(eg from project list), Plan B(your preferred 1-2 supervisors), Plan C(public data), etc
- Avoid topics like “China market equity fund pricing model and forecast” or “What lead to the meteoric rise of Tesla stock?”
- Those using Kaggle data wholesale without modification – expect average grade

Tips on choosing supervisors

- At least 1 whose area is aligned to what you want to do
- At least 1 associate and 1 FT faculty
- Those supervisors who are less popular will be assigned first

Typical BSBA graduate CV



PERSONAL DETAILS

Gender : Male
Nationality : Singaporean
Age : 28
Marital Status : Married
National Service: Completion on 11th May 2006

CAREER OBJECTIVES

To enhance learning and application of Business Intelligence to different environment and situations

EDUCATION BACKGROUND

Diploma in Information Technology **Jul 00 to Dec 03**
Ngee Ann Polytechnic

- Specialise in Software Engineering & Multimedia
- Focus in software programming using JAVA language and Multimedia development using Flash and Adobe Photoshop

Achievements:

- Orientation Leader for FOC in 2002
- Swimming Captain for Ngee Ann Polytechnic
- Waterpolo Member for Ngee Ann Polytechnic

Bachelor of Science Business Analytics **Jan 09 to Dec11**

- Specialise in Business Analytics application using IBM SPSS modeler

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Typical BSBA graduate CV

WORK EXPERIENCE

National Service — **Jan 04 to May 06**
Computer Aided Instruction Operator (School of Military Intelligence)

- Setup and maintenance of LAN and Wireless networks
- Administrating emails and servicing of computers
- Assisting in meetings and presentations
- Projects brainstorming
- Person in Charge of Planning and Liasing with Vendors for the Migration and Allocation of all the computers in School of Military Intelligence(SMI)

Starhub — **Jun 06 to Dec 06**
Technical Support Assistant

- Troubleshooting PCs and Wireless Network problems over the phone for customers
- Able to handle difficult customers and offer incentives to prevent further disputes judging on case by case basis.

APEC Secretariat — **Jan 07 to Mar 07**
IT Administrator

- Troubleshooting PCs, Software and Wireless Network problems for diplomats and support staffs within organization and during International Meetings.
- Plan and prepare laptops for Migration in the organization individually

Komatsu Asia & Pacific Pte Ltd — **Apr 07 to Current**
Senior IT Officer

- Business Application support for ERP system running on IBM Operating system OS/400
- Involved in the planning and testing phase of Komatsu Information Portal development
- Travelled overseas to conduct training sessions for overseas staffs when rolling out Komatsu Information Portal
- Administrator for Websphere Portal Express server
- Troubleshooting PCs, Software and Wireless Network problems for staffs

Typical BSBA graduate CV

CAPABILITIES

Programming:	• Able to use Action Scripting for Flash MX
Administration:	• Efficiency in helpdesk services, data entry and filing, and presentations
Technical Skills:	• Able to effectively assemble, troubleshoot, and service computers and network infrastructure • Analytical approach to resolving and producing solutions to daily operation issues for ERP system • AS400 Administration and operation support
Software Technology:	• Microsoft Words, PowerPoint, Excel, Access • Websphere Portal Express Administration • IBM SPSS Modeler
Personal Traits:	• Achieved good interpersonal communication skills inherited through daily inter-departmental communication whilst in army and during work experience • Easily adapt to changes in environment
Languages:	• English and Mandarin (spoken: fluent, written: good)

INTERESTS

Engage in troubleshooting and resolving challenging tasks and situations, coach swimming, travelling overseas

PREFRENCES	
Willing to Travel	Yes
Willing to Relocate	Yes
Expected Monthly Salary	c
Availability:	2 months notice
Reason for Leaving Last Job	Change of career due to interest in Business Intelligence field

Ideal CV

PROJECT / CONSULTANCY SERVICES EXPERIENCE

Extensive experience and advanced knowledge in analytics. Help customers to use analytics to gain critical data-driven insights necessary to drive business performance.

RELEVANT EXPERIENCE:

- As Senior Modeler, implemented **Customer Segmentation and Business Intelligence Solution for a leading provider of Postal Services**
  - Designed and deployed Business Intelligence solution to provide actionable insight to the Management Team for better and informed decision making
  - Performed data enrichment and Customer Segmentation which led to the development of an effective and focused marketing and sales campaign that targeted appropriate customers
  - Also served as technical lead on the project, gathering functional requirements and identifying and resolving data quality issues
  - Equipped information users with the necessary knowledge and skills to support future reporting requirements
- Provided **Data Mining Advisory Services to a Local Immigration Agency** in developing predictive model for identifying employment pass holders who are likely to convert to permanent residents.
- Developed prototype for **Identification of Similar Cases through Text Mining and Clustering of Offenders with Similar Profiles for a Local Law Enforcement Agency** that helped to improve the current manual identification of similar cases that used similar modus operandi as well as improve the identification of similar profiles of offenders to help analysts in their analytical work.
- Developed prototype for Root **Cause Analysis for a Large Global Hard Disk Manufacturer** that enabled the process engineers to gain insights into the drivers for certain failures that they had never suspected before. This enabled the
- Developed prototype for **Near Real-Time Operational Reporting for a Large Global Wafer Manufacturer** that enabled the manufacturing and equipment engineers to quickly monitor the line as well as status of each machine.
- Developed prototype for **New Product Forecasting for a Large Consumer Electronics Marketing Company** that helped improved forecasting accuracy by 12%. The objective is to improve the current new product forecasting was to better forecast demand for their products to avoid stockouts.
- Implemented **Statistical Forecasting Solution a Large Global Pharmaceutical Company** that improved demand forecasting accuracy by 40%. The objective is to improve the current demand forecasting accuracy that led to reduction in inventory costs
- Developed prototype in **Text Mining of Call Centre Unstructured Data for a Large Global High Tech Corporation**. Transformed call centre unstructured data into useable and intelligible format that triggered early warnings and enabled the timely detection of potential quality issues, enabling the Corporation to recognize trends, uncover potential product issues and identify business opportunities
- Developed prototype in **Text Mining of Defect Logs for a Global Airline**. Identified seats affected from the defect logs, automated the identification of defects and the action taken. This will enable the timely detection of root cause of the defects so that remedial actions can be taken in a timely manner.

PREVIOUS EMPLOYMENT

TECH SEMICONDUCTOR (SINGAPORE) PTE LTD, SINGAPORE (NOV 1998 – 2004)

- Implemented Trace Features Extraction
  - Contributed to the development of a robust data mining method for root cause analysis and trace features extraction by defining algorithm to enable the storage of trace features in the Data Warehouse
  - Implemented the extraction of these trace features in database to perform data mining
- Provided consultation in the areas of Statistics and Operations Research to process engineers
- Evaluated and introduced data mining and analytical tools for engineers to do root cause analysis that achieved faster cycle time to solving yield problems
- Defined datamarts that captured material usage that enhanced the coverage of the data mining and analytical tool
- Managed a team of programmers that automated the generation of trigger reports and maintained the graphical user interface for the extraction of massive data for data mining
- Developed teaching material and teach classes in basic statistics, statistical process control, design of experiments and response surface methodology

DEVELOPMENT BANK OF SINGAPORE, SINGAPORE (APR 1991 –- AUG 1993)

- Analyzed bank operations for control, efficiency and effectiveness which involved fact finding, collection of supporting data, report writing and presentation of recommendations to higher management

EDUCATION

Virginia Polytechnic Institute & State University, United States Doctor of Philosophy (Statistics)	1995 to 1998
Virginia Polytechnic Institute & State University, United States Master of Science (Statistics)	1993 to 1995
National University of Singapore, Singapore Bachelor of Social Science (Economics - Statistics stream)	1987 to 1991

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Improved BSBA graduate CV

Need to include CGPA, analytics courses and grades, description of analytics projects and any other analytics job held etc.

CAREER OBJECTIVES

To enhance learning and application of Business Analytics to different environment and situations

EDUCATION BACKGROUND

BSc in Business Analytics **Jan 09 to Dec11**

SIM University

- Achieved CGPA of 3.98/5
- Analytics courses taken:

Data Visualisation for Business	B+
Selected Topics in Regression	B-
Fundamental of Data Mining	A
Association and Clustering	A
Business Analytics Application	B+
Predictive Modeling	A
Selected Topics in Business Analytics	B+
Business Analytics Applied Project	A-

- Business Analytics Applied Project: One-Pass Naïve Bayesian Classification System
    - Tackle huge data stream by performing One-Pass learning for effective computation
    - Display efficient computation of Naïve Bayesian model using MS Excel 2007
    - Compare classification errors and accuracy to other straw models

Analytics Innovation Forum 2021

Date: 5 June 2021 (Sat)
Time: 10am – 12pm
Venue: Online

Forum Agenda:

Time	Activity
10:00am	Opening
10:05am	Sharing by Tan Ci Yuan Topic: Predicting the Severity of Coronavirus Disease
10:15am	Sharing by Gary Kho Hoe Siang Topic: Analytical Insights of Autonomous Taxis in Singapore
10:25am	Sharing by Rebecca Low Man Ting Topic: Data Science and Skills required in its Job Professions
10:35am	Sharing by Nadea Z Merchant Topic: Using Predictive Analysis to Minimise Media Spend Wastage in Advertising
10:45am	Sharing by Ho Wan Xuan Topic: Transformation of Postal Delivery and Services in Singapore
10:55am	Discussion
11:40am	Closing

Register in advance for the Forum:
https://suss.zoom.us/meeting/register/tJUtc-yrpzwiH9P_TpNRsMdIayl6WAKN0K6E

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Question & Answer