



Faculty of Engineering, Built Environment and Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en
Inligtingtegnologie / Lefapha la Boetšenere,
Tikologo ya Kago le Theknolotši ya Tshedimošo

Department of Industrial and Systems Engineering

12 November 2020
18:00 – 19:30 ±

Projects Evening Webinar Program

Welcome

Prof Johan W Joubert

Introduction of students

Dr Wilna Bean

A machine learning approach to
improve income prediction

Marlize de Villiers

Development of a real-time data collection information
system at Horizon Global (Pty) Ltd

Nico Heystek

Quantification of flexible work
hours in MATSim

Nadine Smal

I n t e r v a l

An analysis of stainless steel defects

Bongani Ndlovu

Business process re-engineering:
A case study in the agriculture financing industry

Esmarie von Benecke

Optimisation of coal blending for
coke-making at an integrated steel plant

Daniel Charters



Awards ceremony

Prof Sarma Yadavalli

Best project poster

Best project document

Best project presentation

Comprehensive list of projects

	Surname	Name	Project Title
1	Abrahams	Nicolle	Mobile application design and future financial planning for pet sitting company Waggly Tails
2	Alexander	Shannon	Evolving the operations of events management by developing streamlined solutions
3	Ashoori	Bayan	Digital opportunities for continuous improvement tools in a large third-party logistics company
4	Aurakeasamy	Sachin	Production planning and control for a job shop
5	Bazerbachi	Karim	Navigation and control of a robotic vehicle in a work environment of static and dynamic obstacle
6	Bergh	Lizanne	Designing and implementing a reverse logistic system
7	Boer	Danielle	Lean culture assessment and improvement at a large third party logistics company
8	Bosman	Bianca	Inbound logistics modelling and forecasting the number of items arriving for operational waste minimization
9	Botha	Sunelle	A decision support system for customer segmentation through the use of machine learning
10	Brown	Ashton	A layout and lean manufacturing study of a final phase furniture production process
11	Burger	Louise	Analysing the effect of a possible incentive on the primary sector of the local sunflower industry
12	Burger	Niel	Rail versus road feasibility study
13	Chandler	Jason	Ideal activity-based resourcing for loading and unloading at a distribution centre in Gauteng
14	Charters	Daniel	Optimisation of coal blending for coke-making at an integrated steel plant
15	Coetzee	Lizanne	Modelling to improve a system's loyalty programs and prioritisation of inhibiting factors
16	Coetzer	Casper	Machine interference optimisation
17	Coetzer	Adriaan	Optimisation and improvement for generating an optimal travel itinerary
18	Combrinck	Lian-Maré	Developing a simulation model to minimise the congestion of totes at the picking area within a telecommunications warehouse
19	Combrinck	Zamri	Improving the order-picking process of Coca-Cola's warehouse in Midrand by determining the ideal product placement
20	Cronje	Jocha	The development of a decision-support tool to determine optimal school bus routes
21	Dayal	Kumesh	Using simulation modelling to improve resource allocation and inbound scheduling for the fast-moving consumer goods environment
22	De Klerk	Hanno	The strategic repositioning of Quattro Archery within an ever-changing environment

23	De Villiers	Marlize	A machine learning approach to improve income prediction
24	Du Plessis	Evan	Design of efficient warehouse storage system at Grit Procurement Solutions
25	Du Preez	Anri	Determining the boundary conditions of various inventory management policies using simulation
26	Elli	Geoffrey	The implementation of an information system to optimise business operations
27	Farrel	Andrew	Shovel swings analysis at an open cast mine
28	Ferreir	Ignatius	Implementation of demand driven material resource planning
29	Gai	Mikael	An efficient logistics system for CozaCards
30	Gordon-Cumming	Roualeyn	Comparative economic analysis of irrigation pumps and photovoltaic systems, using simulation modelling
31	Groenewald	Carla	Statistical analysis, reliability evaluation and prioritisation modelling of a knowledge acquisition system
32	Groenewaldt	Genavieve	Developing a decision support system for upskilling employees at PWC
33	Guerra	Angelo	Analysis and redesign of business processes to fix misalignment issues at a glass manufacturing firm
34	Haasbroek	Johan	Inventory management at Steers
35	Hamilton	Simoné	The reduction of total container inventory management cost of the outbound exports at a chemical manufacturing company
36	Hand	Daniel	Using statistical techniques to understand the correlation of parameter variation on product quality for process intervention purposes
37	Haupt	JP	Quality assurance of a dairy plant
38	Haycock	Varuscha	Optimisation of supplier scheduling and space allocation at Wispeco
39	Heystek	Nico	Development of a real-time data collection information system at Horizon Global (Pty) Ltd
40	Ho-Tong	Joshua-Richard	Validation of Lean Six Sigma best practices for a CNC manufacturing process
41	Jacobs	Paul	Multi-day runs in MATSim
42	Janz	Arno-Armandt	Preventative maintenance through database design with facility layout to minimize system downtime and maintenance costs
43	Johnson	Lytle	Achieving a 5-day cycle time
44	Kawanga	Sibongile	Preventing stock-outs at Alicats' pub and restaurant
45	Khiba	Kgothatso	Improving the supply methodology at the engine dress kitting area of Ford Motor Company®
46	Kruger	Jean-Marc	Facility planning and design for a sustainable agricultural operation
47	Kuppen	Arno	Workflow and data automation at Storex

48	Küther	Andrea	Optimisation of artisan workforce through personnel placement assessment
49	Labuschagne	Brandon	Business process modelling and project auditing for AM Systems Integrations
50	Le Riche	Julie	Development of a dynamic multivariate machine learning algorithm to predict the chances of employment for young graduates
51	Mahlangu	Nkosinathi	Locating on-demand delivery vehicles using a clustering approach
52	Mahomed	Nabeel	Optimising strategic planning at GS TVET college
53	Markram	Nicholas	Digital transformation of an employee on-boarding process
54	Masinga	Matiko	Mapping, analysis and improvement of patient care in the emergency department of Tembisa Hospital
55	McDonald	Connor	Business case model investigation of current approach inputs for capital expenditure and new model development
56	McMullen	Tyrone	Sales forecasting in a struggling economy
57	Meadows	James	Investigating possible solutions regarding a faster response time to changes in the Vector Logistics supply chain from a technical perspective
58	Mentz	Chad	Theoretical impact of single panel re-spray systems using simulation at an automotive manufacturer
59	Modise	Junior	Inventory management system design for Manelipets company
60	Moopanar	Yashalen	Stocking policy simulation
61	Motsepe	Nonofo	Improving packaging efficiency
62	Mouton	Chantené	Optimisation of the information system for the pharmaceutical wholesaler, Pharmavalu Traders
63	Moyo	Mthandazo	Decision making through modelling and analysis for evaluation of alternative revenue collection methods
64	Mudima	Chiedza	Sensitivity analysis of students' intellectual dynamics and learning capability in an ascending knowledge acquisition system
65	Mukono	Runyararo	Improving the sorting process at Wispeco Aluminium
66	Murta	Gabriella	Development of robotic process automation for an efficient requisition process at the Department of Facilities Management, University of Pretoria
67	Ndlovu	Brain	Analysing and improving the process of patient care in a general surgical theatre unit
68	Ndlovu	Bongani	An analysis of stainless steel defects
69	Nhlumayo	Samukelo	Improving the functionality of the Church Square Post Office
70	Nkoana	Amogelang	Ideal activity-based resourcing for the picking and inbound storage areas at a central distribution centre in Gauteng
71	Nothnagel	Elsje	Using prescriptive modelling in order to reduce patient waiting times in the emergency department of the Steve Biko Academic Hospital

72	Olivier	Jeannetta	Developing a decision support system for allocating resources in a vegetable packing line
73	Olivier	Elizabeth	The extension of the ADOxx BPMN modelling tool to facilitate improved classroom learning
74	Opperman	Petra	Information system design and application of lean techniques at Waterskills (Pty) Ltd
75	Phillips	Meghan	Feasibility study to implement facial recognition as an attendance tracking solution in classrooms for Curro Holdings
76	Phoswa	Nhlalenhle	Business process re-engineering to provide efficiency in a lab
77	Prasad	Lakshmi	Reducing variations in the gaps and transition in an automotive industry process
78	Ramalatswa	Portia	Re-design and development of a facility layout for a condom inspection laboratory
79	Rampedi	Thato	The analysis and design of an information system in a small civil engineering company
80	Rossouw	Jacques	Sensing, localizing and mapping to monitor rhinos in the wild using UAVs for effective control and prevention of poaching
81	Roux	Jacobus	Cash-in-transit-heist prediction and location identification
82	Sanatkaran	Maryam	Decreasing waiting time at the emergency department of Tshwane District Hospital
83	Sangweni	Ntuthuko	Demand forecasting using artificial intelligence
84	Sekgobela	Keletso	Developing a customer acceptance line
85	Senekal	Charne	Bus scheduling problem
86	Smal	Nadine	Quantification of flexible work hours in MATSim
87	Smit	Johann	Optimisation of spot welding parameters
88	Smit	Tammy	Assess and improve customer adoption of financial technology
89	Sooprayen	Duneshrie	Exploring alternatives to improve Nestlé's current outbound logistics network
90	Stadler	Thurston	An investigation into forecasting and inventory management for the optimisation of a service parts warehouse
91	Stander	Edna	Improving waste management processes at the Kruger National Park
92	Sunny	Shaun	SAPO's e-commerce development for profitability
93	Swanepoel	Marné	The development of a centralised system for the Vertically Integrated Projects (VIP) programme at the University of Pretoria
94	Swanepoel	Shané	Modelling the causal analysis, prediction and control of gender-based violence in a relationship
95	Tar	Ebrahim	Capital budgeting to evaluate the technical and economic feasibility of energy efficient investment alternatives
96	Taylor	Bradley	Implementing a FIFO slotting system at Vacuform

97	Tshikila	Lwazi	Improving activities within the settlement process at a central distribution centre in Gauteng
98	van Coller	Armand	The storage layout optimisation conundrum
99	Van der Linde	Madeleine	Causal analysis to determine factors influencing delivery turnaround time
100	Van Niekerk	Martie	The improvement of the process flow between Tshwane District Hospital and Steve Biko Academic Hospital
101	Van Heerden	NJ	Heterogeneous fleet and route optimisation for Arrie Nel pharmacy group
102	Varghese	Kiran	Using simulation modelling to assess the feasibility of manning single operators to multiple machines
103	Venter	Anzel	Reducing overinvestment in stock with information system design and facility planning
104	Venter	Ruben	Determining the effect of varying efficiency levels on the rolling stock fleet size of Greenfield railway projects
105	von Benecke	Esmarie	Business process re-engineering: A case study in the agriculture financing industry
106	Williamson	Hugh	Investigating the level of deterministic behaviour of the density-based clustering algorithm
107	Worrall	Kirsten	The optimisation of material flow within a steel plant

Donors

