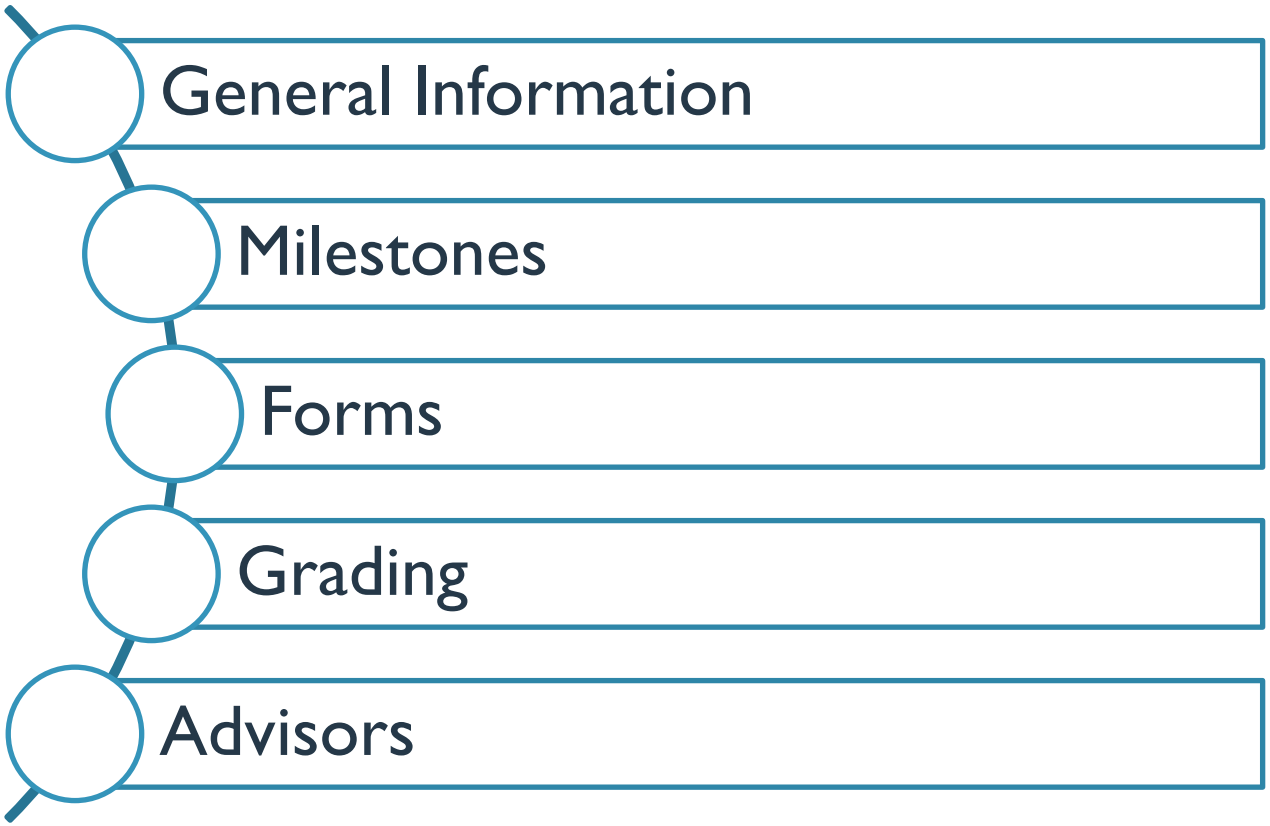
ISTANBUL KULTUR UNIVERSITY

INDUSTRIAL ENGINEERING DEPARTMENT

IE8900 – GRADUATION PROJECT

Agenda



General Information

- Students who are expected to complete at least 176 ECTS by the end of this semester are eligible to take the graduation project in the 2025-2026 Spring Semester.
- Each group → 5 students
- A real problem with the collaboration of a company should be studied.
- Necessary data should be collected/studied.
- IE methods/algorithms/techniques should be applied to solve the problem on hand.
- The results should be analyzed/discussed.
- Insights & recommendations should be stated.

Milestones for 2025-2026 Spring

Advisor Preference Form

- Due Date: 05.12.2025

Advisor Agreement Form

- Due Date: 02.01.2026

İSTANBUL KÜLTÜR UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF INDUSTRIAL ENGINEERING

IE8900 Graduation Project
Advisor Preference Form

Student	
(1) Number / Name / Signature	
(2) Number / Name / Signature	
(3) Number / Name / Signature	
(4) Number / Name / Signature	
(5) Number / Name / Signature	
Advisor Alternatives	
1. Title / Name	
2. Title / Name	
3. Title / Name	
4. Title / Name	
5. Title / Name	
6. Title / Name	
7. Title / Name	
8. Title / Name	

Date (DD/MM/YYYY)	
Signature of the course coordinator (Assist. Prof. Dr. Okay Işık)	

- Due Date: 05.12.2026

Advisor List

Advisors
Prof. Dr. Tülin Aktin
Prof. Dr. Murat Ermiş
Assist. Prof. Dr. Zeynep Gergin
Assist. Prof. Dr. İbrahim Ethem Tarhan
Assist. Prof. Dr. İlayda Ülkü
Assist. Prof. Dr. Duygun Fatih Demirel
Assist. Prof. Dr. Okay Işık
Assist. Prof. Dr. Tuğçe Apaydın

İSTANBUL KÜLTÜR UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF INDUSTRIAL ENGINEERING

- Due Date: 02.01.2026

IE8900 Graduation Project
Advisor Agreement Form

Student	
(1) Number / Name / Signature	
(2) Number / Name / Signature	
(3) Number / Name / Signature	
(4) Number / Name / Signature	
(5) Number / Name / Signature	
Advisor	
Title / Name	
Signature	
Date (DD/MM/YYYY) (to be filled by the advisor)	

Milestones for 2025-2026 Spring

- Submission of Proposal Form — Due Date: 06.03.2026
- Proposal Presentation — Date: 11.03.2026
- Submission of Final Report — Due Date: 23.05.2026
- Final Presentation — Week of 08.06.2026
- Submission of 2 copies — 26.06.2026

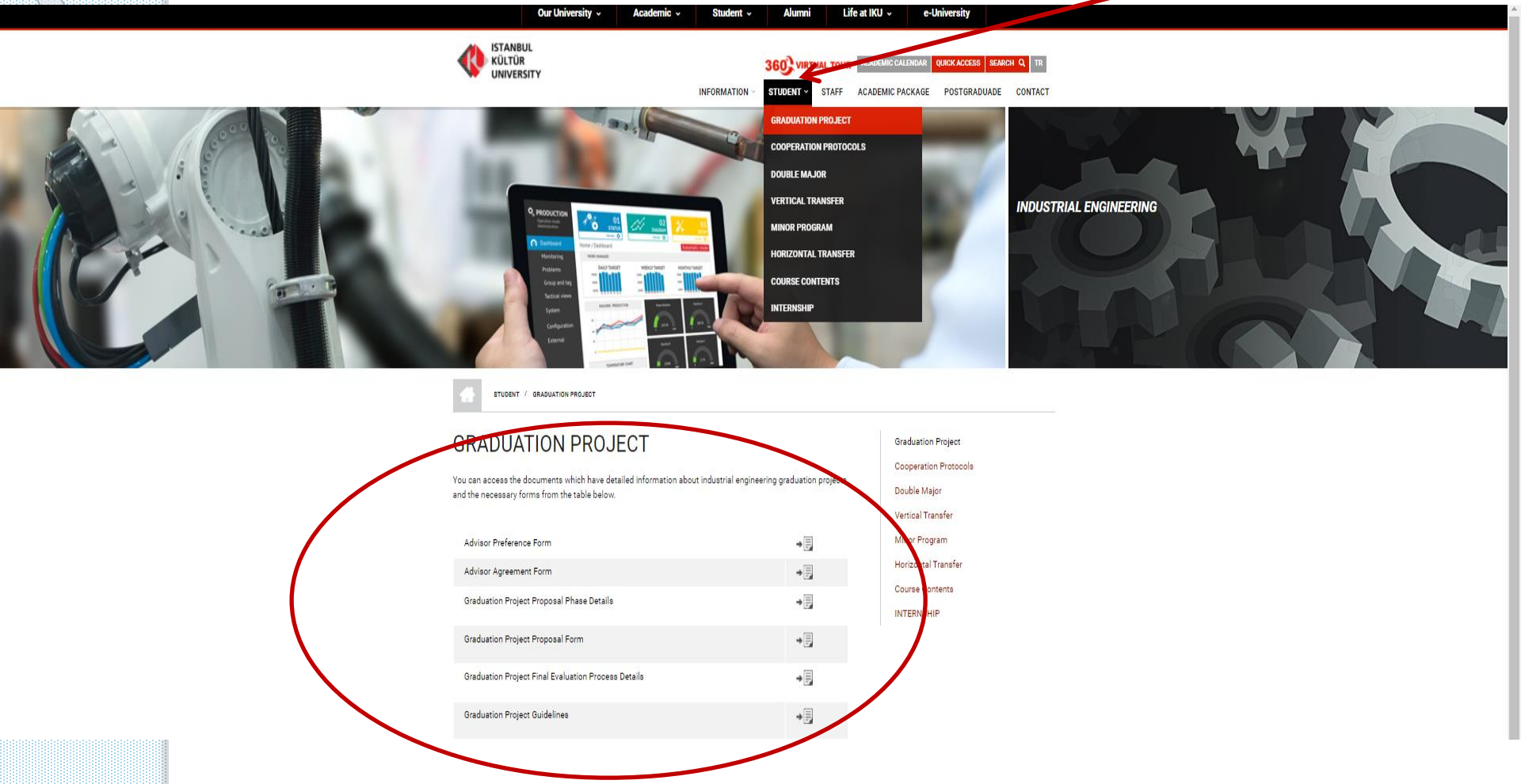
İSTANBUL KÜLTÜR UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF INDUSTRIAL ENGINEERING

IE8900 Graduation Project - Proposal Form

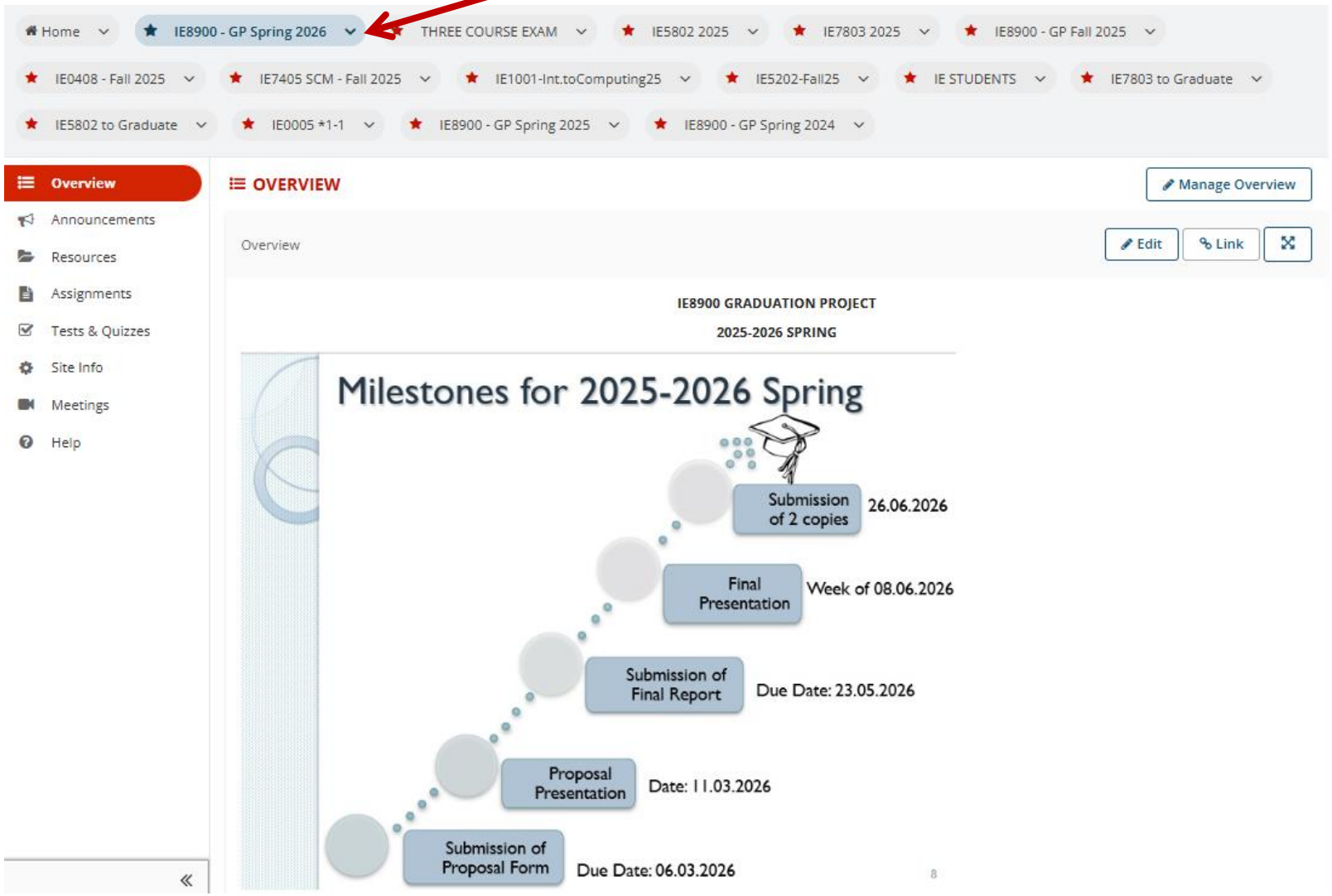
Proposal	
Title:	
Summary (maximum 1200 characters):	
Student	
(1) Number / Name / Signature	
(2) Number / Name / Signature	
(3) Number / Name / Signature	
(4) Number / Name / Signature	
(5) Number / Name / Signature	
Advisor	
Title / Name, Family Name	
Signature of the advisor	
Date (DD/MM/YYYY) **(to be filled by the advisor)**	

Forms

https://endm.iku.edu.tr/tr/ogrenci/bitirme-projesi



Forms and Other Resources (Spring 2025-26)



Grading of the Project

- **Presentation of the Proposal** 15%
- **Final Project Report** 60%
  - Individual Performance 5%
    - Interdisciplinary Teamwork Score (2%)
    - Individual Work Score (1%)
    - Written and Verbal Communication Score (2%)
  - Content 40%
  - Format 15%
- **Presentation of the Final Project** 25%

100%

Evaluation Form for **Proposal Presentation** (15 Points)

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Proposal Form	10%										
Problem Definition	20%										
Proposed Methodology	20%										
Oral Presentation	20%										
Response to Questions	20%										
Project Schedule Plan	10%										

Evaluation Form for **Final Presentation** (25 Points)

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Slide Preparation	20%										
Oral Presentation	30%										
Response to Questions	50%										

Evaluation Form for **Final Presentation** (25 Points)

- A student who does not attend the final presentation receives a letter grade of **"F"** as the final grade and is considered unsuccessful in the course.

Evaluation Form for **Final Report** (40 Points) by All Advisors

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Abstract	5%										
Introduction	10%										
Literature Review	5%										
Problem Definition	15%										
Methodology	20%										
Implementation and Results	30%										
Conclusion	10%										
Recommendation for Future Studies	5%										

Evaluation Form for your Individual Performance of **Final Report** (5 Points) by Your Advisor

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Interdisciplinary Teamwork	40%										
Individual Work	20%										
Written and Verbal Communication Score	40%										

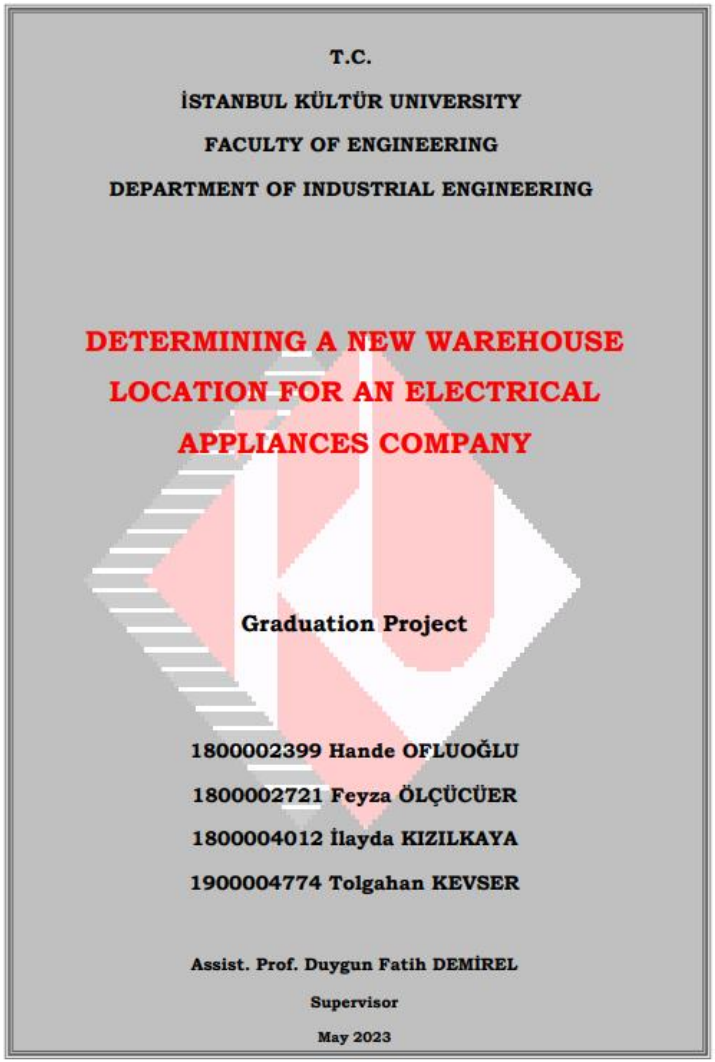
Evaluation Form for **Final Report** (15 Points) for Format

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Wording Originality Ratio	20%										
Margins	20%										
Table of Contents and Page Numbers	20%										
Project Schedule	5%										
Tables and Figures	20%										
References and Citation	15%										

Evaluation Form for **Final Report**

- Students who have submitted **unacceptable reports** (format / content) are given an **"E" grade.**
- You must **complete** the deficiencies **within 10 days** from the date of presentation.
- The students who complete the required studies within this period are given a grade of success, and the grades of the students who **fail to complete** the report become **"F"**.

Report Template



T.C.

İSTANBUL KÜLTÜR UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF INDUSTRIAL ENGINEERING

DETERMINING A NEW WAREHOUSE LOCATION FOR AN ELECTRICAL APPLIANCES COMPANY

Graduation Project

1800002399 Hande OFLUOĞLU

1800002721 Feyza ÖLÇÜCÜER

1800004012 İlayda KIZILKAYA

1900004774 Tolgahan KEVSER

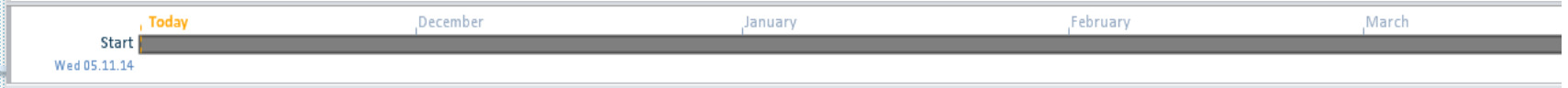
Assist. Prof. Duygun Fatih DEMİREL

Supervisor

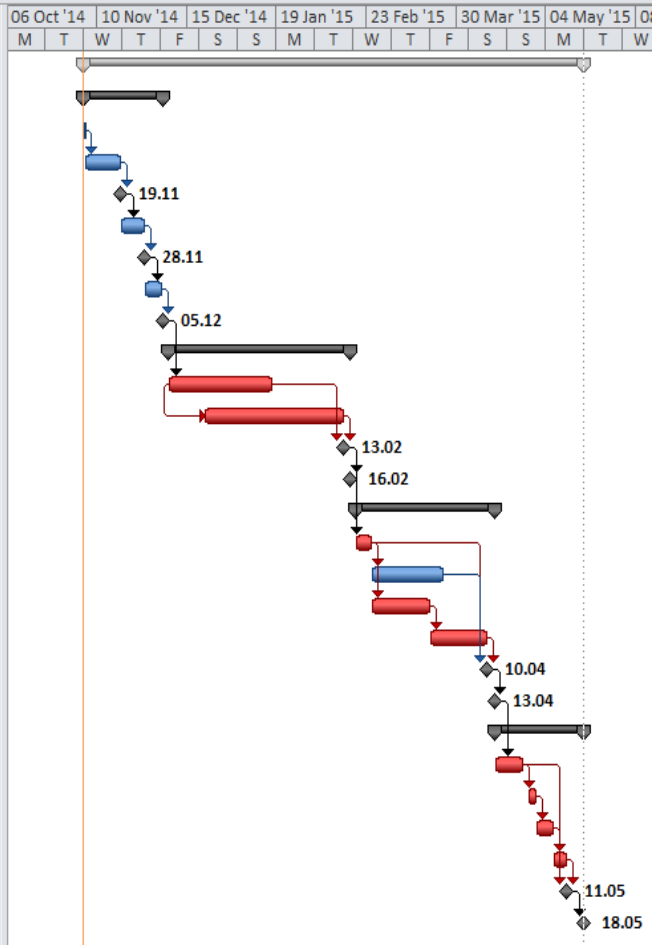
May 2023

- Graduation Project **Reports** must be written in the format provided by the Template (Course CATS page / Resources).
- The template is a MS Word file; all the headings, paragraph and font settings are arranged.
- It is very **important** to use to Template and the correct referencing (APA) format (Course CATS page / Resources).

Project Schedule (Example)



	Task Name	Duration	Start	Finish
0	**IE8900**	**139 days**	**Wed 05.11.14**	**Mon 18.05.15**
1	**Initiation Phase**	**23 days**	**Wed 05.11.14**	**Fri 05.12.14**
2	Information meeting with all the advisors	4 hrs	Wed 05.11.14	Wed 05.11.14
3	Meetings with possible advisors	10 days	Wed 05.11.14	Wed 19.11.14
4	Submission of advisor preference form	0 days	Wed 19.11.14	Wed 19.11.14
5	Matching advisors&project teams	7 days	Wed 19.11.14	Fri 28.11.14
6	Declaration of the teams with advisors	0 days	Fri 28.11.14	Fri 28.11.14
7	Meeting with the advisor	5 days	Fri 28.11.14	Fri 05.12.14
8	Submission of advisor agreement form	0 days	Fri 05.12.14	Fri 05.12.14
9	**Proposal Phase**	**51 days**	**Mon 08.12.14**	**Mon 16.02.15**
10	Searching company and meeting with the companies	30 days	Mon 08.12.14	Fri 16.01.15
11	Identifying project title, scope and methodology	40 days	Mon 22.12.14	Fri 13.02.15
12	Submission of proposal	0 days	Fri 13.02.15	Fri 13.02.15
13	Proposal presentation	0 days	Mon 16.02.15	Mon 16.02.15
14	**Progress Phase**	**38 days**	**Thu 19.02.15**	**Mon 13.04.15**
15	Preparing the detailed scope (content)	4 days	Thu 19.02.15	Tue 24.02.15
16	*Making literature survey*	20 days	Wed 25.02.15	Tue 24.03.15
17	*Collecting and analysing data*	17 days	Wed 25.02.15	Thu 19.03.15
18	*Applying the methodology and getting initial results*	16 days	Fri 20.03.15	Fri 10.04.15
19	Submission of progress report	0 days	Fri 10.04.15	Fri 10.04.15
20	Progress Presentation	0 days	Mon 13.04.15	Mon 13.04.15
21	**Finalization Phase**	**25 days**	**Tue 14.04.15**	**Mon 18.05.15**
22	*Completing the methodology*	9 days	Tue 14.04.15	Fri 24.04.15
23	*Aggregating the final results*	3 days	Mon 27.04.15	Wed 29.04.15
24	*Analysing the results*	5 days	Thu 30.04.15	Wed 06.05.15
25	Finishing the report and writing conclusion	3 days	Thu 07.05.15	Mon 11.05.15
26	Submission of final report	0 days	Mon 11.05.15	Mon 11.05.15
27	Final Presentation	0 days	Mon 18.05.15	Mon 18.05.15



Originality Check

- The report gets 10 when the wording originality is over 95%.
- It gets 9 when the originality is between 90% - 94%.
- It gets 8 when the originality is between 85% - 89%
- It gets 7 when the originality is between 80% - 84%.
- It gets 6 when the originality is between 75% - 79%.
- It gets 5 when the originality is between 70% - 74%.
- It gets 4 when the originality is between 65% - 69%.
- It gets 3 when the originality is between 60% - 64%.
- It gets 2 when the originality is between 55% - 59%.
- It gets 1 when the originality is between 50% - 54%.

- **The report fails when the originality is below 49%.**

Attendance

İSTANBUL KÜLTÜR UNIVERSITY
DEPARTMENT OF INDUSTRIAL ENGINEERING
IE8900 GRADUATION PROJECT
SPRING 2024-2025
WEEKLY MEETING ATTENDANCE SHEET

Week No	Date	Student 1	Student 2	Student 3	Student 4	Student 5
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

Attendance

- If attendance of a student is **below 70%**, student will not allowed to attend the final presentation.

- If attendance of a student is **below 50%**, student will not get any points from the final phase (presentation + report).

Group Workload

İSTANBUL KÜLTÜR UNIVERSITY
DEPARTMENT OF INDUSTRIAL ENGINEERING
IE8900 GRADUATION PROJECT
SPRING 2024-2025
GROUP WORKLOAD

No	Part	Responsible Student(s)
1	Introduction	
2	Literature Review	
3	Company Information	
4	Problem Definition	
5	Methodology	
6	Implementation: Input Data	
7	Implementation: Results	
8	Conclusion	
9	References	
10	Abstract	
11	Özet	
12	Acknowledgement	
13	Appendices	
14	Format Control: Margins	
15	Format Control: Table of Contents	
16	Format Control: List of Figures	
17	Format Control: List of Tables	
18	Format Control: Tables & Figures	
19	Originality	

Graduation Projects_2024-2025 Spring

- Developing A Norm Staff Calculation Method With Excel Spreadsheets To Reduce Labor Costs In Harput Textile
- Time-Cost Optimization In Wastewater Treatment Projects CPM Approach In The Water Treatment Sector
- An Integrated Approach To Evaluate Order Sorting Technologies At Ekol's Warehouse
- Data Mining-Assisted Process Improvement In Electronic Card Manufacturing

Graduation Projects_2024-2025 Fall

- Developing an Excel - VBA Based GPA Calculator
- Integrating Forecasting Techniques and Lean Production to Drive Process Improvement in Printing Operations

Graduation Projects_2023-2024 Spring

- Process Improvement for Field Force Management in Agricultural Business
- Integrating advanced forecasting methods and lean management in textile production
- Value Stream Mapping for a Company in Automotive Industry
- A Mixed Integer Programming Model for Optimization of the Delivery Network System of Korozo Packaging

Research Outcomes from Graduation Projects

Research Outcomes	2009-2020	2021	2022	2023	2024	2025
Sürdürülebilir ve Yenilikçi Teknolojiler Sempozyumu (İKÜ)	0				6	
Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi (YAEM)	60	5	6	3	7	9
European Conference on Operational Research (INFORMS/OR)	18					
Üretim Araştırmaları Sempozyumu (ÜAS)	7					
International Symposium on Production Research (ISPR)	7	2		5	7	
TÜBİTAK 2209 A Programı	1					
TÜBİTAK 2209 B Programı	5	1				2
TÜBİTAK 2241 A Programı	10					
TOTAL	108	8	6	8	20	11

Prof. Dr. Tülin Aktin

Project Title	Topic	Methodology	Presentations / Achievements
An Analytical Approach to Medical Waste Management in Istanbul	Vehicle Routing	•Mathematical Modelling	•EURO2010 (Lisbon)
Analyzing the Effect of Different Marketing Strategies on the Production Planning System of EVYAP	Production Planning	•Regression Analysis •Mathematical Modelling	•YAEM/IIE2013 (İstanbul)
A Multi-Stage Production Planning Model for a Stainless Steel Kitchenware Manufacturer	Production Planning and Scheduling	•Mathematical Modelling •Scheduling Rules •Failure Mode and Effects Analysis	•EURO2015 (Glasgow)
A Decision Support System for Optimizing the Food Stock Distribution in Unilever	Inventory Management	•Modelling in Excel	•YAEM2016 (İzmir) •OR2016 (Hamburg) •Support granted by TÜBİTAK 2209/B program
A Two-Stage Approach for Aircraft Maintenance Scheduling in Turkish Technic	Scheduling	• Distribution Fitting • Mathematical Modelling	• YAEM2017 (İstanbul)
An Analytical Approach to the Warehouse Location Problem of Pürsu in Istanbul	Facility Location	•Weighted Moving Average Method •Median Location Rule •Analytic Hierarchy Process •Mathematical Modelling	• YAEM2018 (Eskişehir)
Analyzing the Repair Process of Aircraft Engines in Turkish Technic by Lean Tools	Lean Management	•Value Stream Mapping •Pareto Analysis •Cause and Effect Diagram •5S Methodology •5 Whys Analysis	• YAEM2018 (Eskişehir)

Project Title	Topic	Methodology	Presentations / Achievements
Inventory Management at Automotive and Aviation Industries: Cases of Borusan Otomotiv and Turkish Technic	Inventory Management	•ABC Analysis •Distribution Fitting •Modelling in Excel •Mathematical Modelling	• YAEM2018 (Eskişehir) • Support granted by TÜBİTAK 2209/B program
An Analytical Approach for Analyzing the Impact of Risks on Production Planning: Case of Öztiryakiler	Production Planning	•Failure Mode and Effects Analysis •Mathematical Modelling	•YAEM2019 (Ankara) •ISPR2019 (Vienna)
An Analytical Approach to Machine Layout Design at a High-Pressure Die Casting Manufacturer	Plant Layout	•ABC Analysis •Hollier Method •Mathematical Modelling	• YAEM2021 (Online-İstanbul) • ISPR2021 (Online-Antalya)
Analyzing the Operations at a Textile Manufacturer's Logistics Center Using Lean Tools	Lean Management	•Value Stream Mapping •Pareto Analysis •Cause and Effect Diagram •5 Whys Analysis	• YAEM2023 (Gaziantep) • IMSS2023 (Sakarya)
An Excel-Based Stock Management System for a Leather Label Manufacturer	Inventory Management	•ABC Analysis •Modelling in Excel •Economic Analysis (Break-Even, Payback Period, Cost-Benefit)	• YAEM2023 (Gaziantep) • ISPR2023 (Online-Antalya)
Improvement of LC Waikiki's E-Commerce Warehouse Operations Using Lean Techniques	Lean Management	•Value Stream Mapping •Pareto Analysis •Cause and Effect Diagram •5 Whys Analysis	• YAEM2024 (Trabzon)
An Integrated Approach to Evaluate Order Sorting Technologies at Ekol's Warehouse	Order Sorting	•Analytic Hierarchy Process •Mathematical Modelling •Economic Analysis (Break-Even, Payback Period, Cost-Benefit)	• YAEM2025 (Ankara)

Assist. Prof. Dr.

Duygun Fatih Demirel

Research Area:

- Facility Location and Network Design Problem
- Disaster management
- Optimization problems in wastewater management
- System dynamics and systems engineering applications
- Fuzzy modeling
- Time series analysis
- Logistics Systems and Supply Chains

Ongoing Studies

- A Machine Learning - Geographical Information System-Based Wildfire Risk Mapping Integrated System Dynamics Model (TÜBİTAK 3501 Project – Under Review)
- Analyzing the Dynamic Impacts of the Expected Istanbul Earthquake on the Economy of Istanbul: An Input-Output Economic Model Integrated to a System Dynamics Model (TÜBİTAK 1001 Project)
- A Dynamic Model for Wastewater Treatment Facility Location and Network Design Problem
- Examining the Impacts of Military Expenditures on Economic Productivity: A System Dynamics Approach
- Determining the Earthquake Debris Collection Areas for İstanbul (İKÜ BAP Project)

Previous IE8900 Graduation Projects:

- Vehicle Routing Optimization for SÜTİŞ (YAEM 2025)
- A Mixed Integer Programming Model for Optimizatlon of the Delivery Network System of Korozo Packaging (YAEM 2024, Journal of Transportation and Logistics)
- Facility Location in the Public Sector: A Case from Bread Distribution Sector
- Determining the Locations of New Delivery Points for Yurtiçi Cargo
- Determining a New Warehouse Location for an Electrical Appliances Company (ISPR 2023, YAEM 2023)
- Optimization of the Distribution Process of Renault Passenger Cars in Turkey
- Warehouse Layout Optimization at Mesan
- Wastewater Treatment Plant Location and Network Optimization in Antalya
- An Employee Assignment Model for Grant Thornton Turkey
- Determining A New Warehouse Location Selection for A Logistics Company (TÜBİTAK-2209-B project, YAEM 2021)

Previous IE8900 Graduation Projects:

- Value Stream Mapping at Sun-Set Emprime (YAEM 2021)
- Sales Forecasting and Production Planning at Toraman Tekstil
- Lot Sizing and Timing at AK-AR A.Ş.
- Implementation of Lean Manufacturing Techniques at Altınbaş Ayakkabı Sanayi Ltd Şti
- Lot Sizing in adL with Wagner-Whitin Algorithm (YAEM2022)
- Lot Sizing for a Key Strategic Customer of an Apparel Manufacturer

Assist. Prof. Dr.

İlayda Ülkü

TOPIC	TITLE	COMPANY	METHODOLOGY
Data Mining 	Data Mining-Based Inventory Management for Retail Stores of LC Waikiki	LC Waikiki	Classification Logistic regression Linear regression Decision trees Random forest Naive Bayes Support Vector Machines K-nearest neighbours
	Using Machine Learning to Identify Predictors of GPA for College Students	NetHealth	
	Data Mining Based Churn Prediction for a Pay TV	DIGITURK	
Logistics Planning 	Monthly Logistics Planning for Salem Trading Company in Doha, Qatar	Salem Trading Company	Mathematical Modelling (VRP , Assignment)
	Weekly Logistics Planning for COOKSHOP Stores in Istanbul	COOKSHOP	

TOPIC	TITLE	COMPANY	METHODOLOGY
Facility Location 	An Analytical Approach to the Choice of Warehouse Space in Clothing Industry	LC Waikiki	Survey Weighted Moving Average Utility Theory Median Location Rule AHP Mathematical Modelling
	Location Selection for Temmuz Triko in Turkey	Temmuz Triko	
	Location Selection Problem of Bursev Plastic in Istanbul	Bursev Plastic	
Production Assembly Line Aggregate Production Plan 	Assembly Line Balancing in Karaman Textile	Karaman Textile	Mathematical Modelling (Line Balancing)
	Cutting Stock Problem for Yılgenci Industry and Trade Corporation	Yılgenci Industry	Mathematical Modelling (Cutting Stock)
	A Production Line Assignment Problem in Ezka Textile Company	Ezka Textile Company	Mathematical Modelling (Assignment) (APP) 
	Aggregate Production Planning for Safety Belt Manufacturer	Ark Press	
	Aggregate Production Planning Model for Adacolor Printing Press Company	Adacolor Printing Press Company	
	Short-Term Capacity Planning Problem in Bursev Plastic Company	Bursev Plastic	
	Short-term Capacity Planning Problem in Pleksan	Pleksan	

Assist. Prof. Dr.

Zeynep Doğruöz-Gergin

TOPIC	TITLE	COMPANY
QUALITY PLANNING	A **QFD** STUDY FOR ANALYSING BRAND PERCEPTION AND PRODUCT DEVELOPMENT	TESAN
	QFD IMPLEMENTATION FOR CRM PROCESSES IN A LOGISTICS COMPANY	SERTRANS LOGISTICS
QUALITY CONTROL	DEVELOPING **ACCEPTANCE SAMPLING** PROCEDURES FOR INCOMING PROCESSES OF A RETAILER COMPANY	DE FACTO
	STATISTICAL PROCESS CONTROL STUDY IN FMCG SECTOR	COCA COLA
QUAL./ PROCESS IMPROVEMENT	A DATA MINING APPROACH TO **PROCESS IMPROVEMENT** AT MERCEDES BENZ	MERCEDES*
	PROCESS IMPROVEMENT STUDY TO DECREASE EXTERNAL FAILURE COSTS	EKİNLER ELEKTRONICS
	A **FMEA** STUDY FOR **QUALITY IMPROVEMENT** IN A DIFFERANTIAL WHEEL PRODUCER	LIMOZ

TOPIC	TITLE	COMPANY
QUALITY COSTS	**QUALITY COSTS ANALYSIS** TO REDUCE FAILURE COSTS	YILDIZ CAM
LEAN MANAGEMENT	**VALUE STREAM MAPPING** IN AN APPAREL SUPPLIER FOR WASTE REDUCTION	ÖZAK TEXTILE
	A VALUE STREAM MAPPING STUDY FOR GROUND OPERATIONS PROCESS	ATLAS AIRLINES
	IMPLEMENTATION OF **LEAN MANUFACTURING** TECHNIQUES IN AN AUTOMOTIVE COMPANY	FORD*
	IMPROVING QUALITY ASSURANCE THROUGH **QUALITY VALUE STREAM MAPPING** (QVSM) FOR A KNITWEAR MANUFACTURER	NARİN TRİKO (KARACA)
PROJECT MANAGEMENT	A STUDY ON **IMPROVING THE RISK MANAGEMENT PERFORMANCE** OF PROJECTS IN A TELECOM VENDOR	ERICSON
	A **PROJECT SELECTION AND SCHEDULING** PROBLEM CONSIDERING RESOURCE CONSTRAINTS	GM PRINTING

TOPIC	TITLE	COMPANY
DECISION ANALYSIS	EVALUATION OF DIFFERENT RAW MATERAILS FOR PAPER INDUSTRY WITH **MCDM** METHODS (MULTIMOORA)	-
	AN APPLICATION OF **MCDM** FOR SELECTING COST EFFECTIVE AND SUSTAINABLE PRODUCTION RECIPE: THE CASE OF CERAMIC TILE PRODUCTION (UTA)	KALE SERAMİK
OTHER	A STUDY ON ORGANIZATIONAL **AGILITY** ASSESSMENT (QUESTIONNAIRE DESIGN)	-
	EUROPEAN SIDE OF ISTANBUL ELECTRICITY **DEMAND FORECAST** FOR 2020	BOĞAZİÇİ ELEKTRİK
	A FUZZY-QFD BASED **MATHEMATICAL MODEL** FOR **SUSTAINABLE SUPPLIER SELECTION**	ICE CREAM CO.
	A COMBINED **QUALITY FUNCTION DEPLOYMENT** AND **MATHEMATICAL MODELLING** APPROACH TO IMPROVE CUSTOMER SATISFACTION	VEFA BOZACISI

Assist. Prof. Dr.

İbrahim Ethem Tarhan

Engineering Economics

Finance

Marketing

Strategic Planning

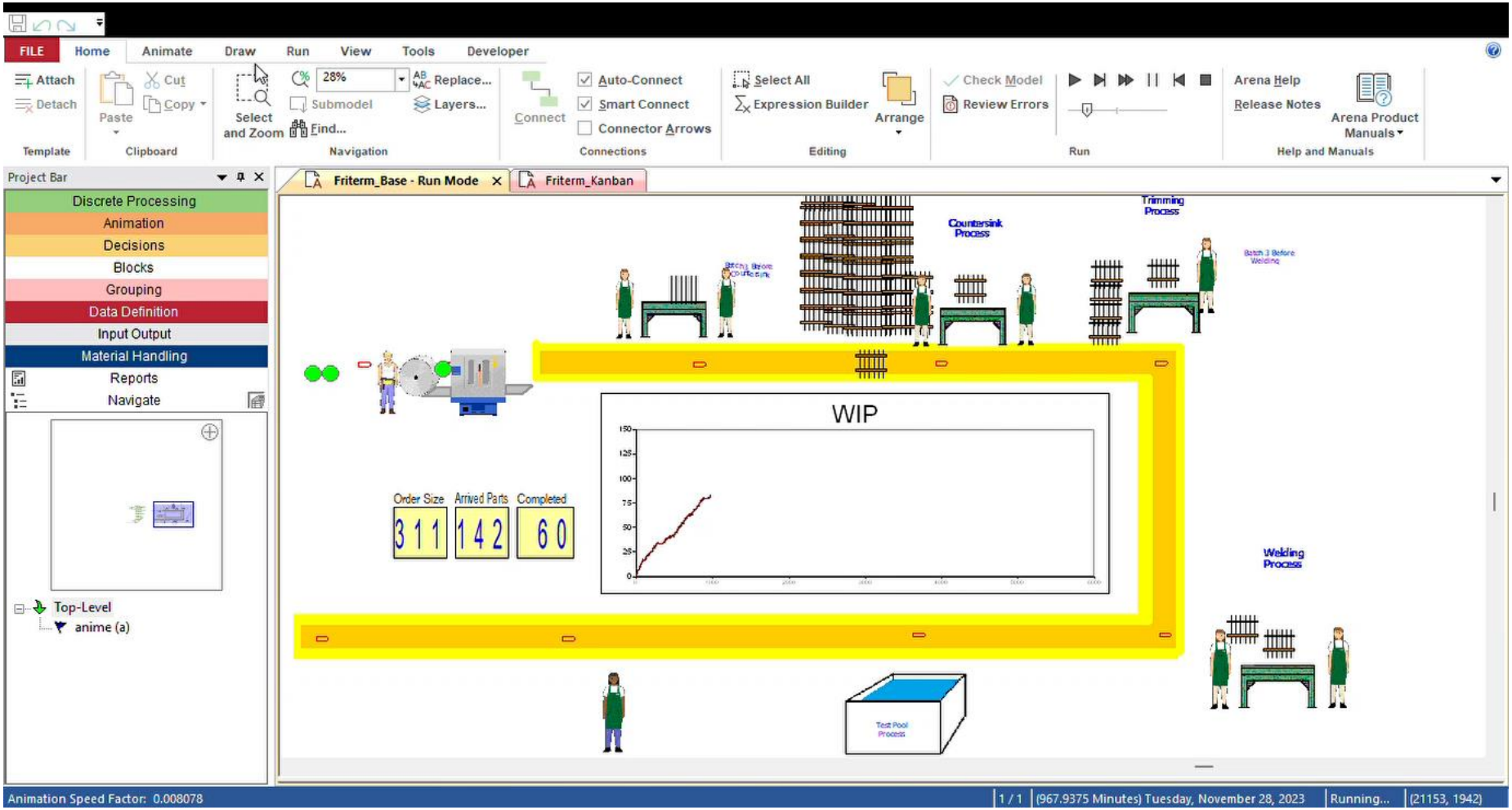
- My expertise lies in the following areas:
- As a lecturer in the Industrial Engineering Department, my teaching and research focus on areas critical for shaping future leaders and decision-makers in both engineering and business disciplines. Here are the specialized areas I bring to the table as an advisor for your final project:
- **Economics:** Gain insights into economic principles and their applications to optimize resource allocation and decision-making in engineering and business contexts.
- **Financial and Cost Accounting:** Master financial analysis and cost accounting techniques that are indispensable for evaluating project feasibility and managing financial performance.
- **Marketing Management:** Explore strategies to analyze markets, understand consumer behavior, and develop competitive products or services, integrating them into engineering solutions.

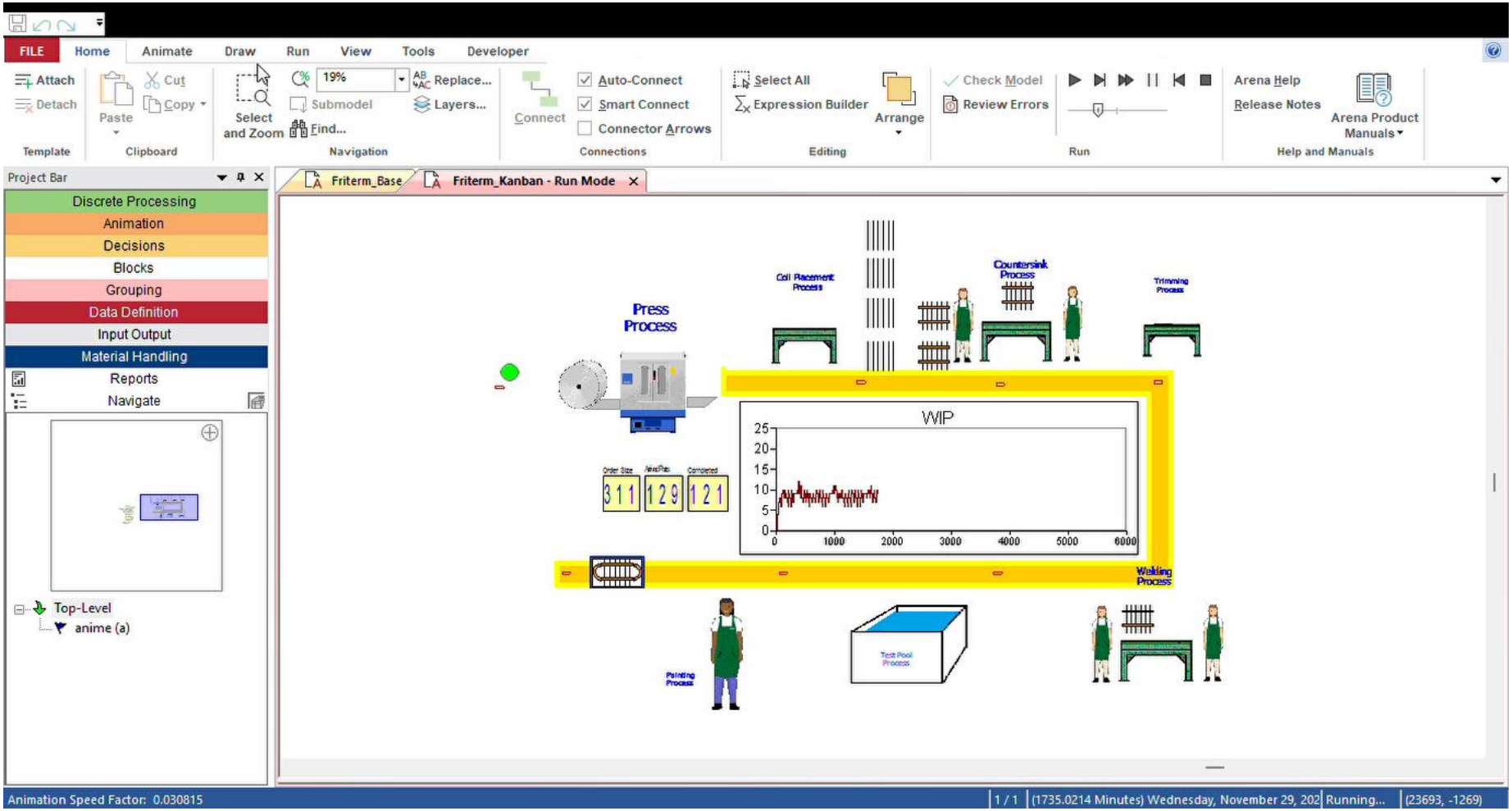
- **Engineering Economy:** Delve into the economic analysis of engineering projects, emphasizing cost optimization, investment appraisal, and long-term sustainability.
- **Strategic Planning:** Learn to design and implement strategic frameworks for organizations, aligning technical operations with business objectives to achieve competitive advantage.
- **Business Administration:** Enhance your understanding of managing organizations effectively, focusing on leadership, operations, and cross-disciplinary integration.
- With my expertise of these fields, I aim to help you create innovative projects that bridge theory and practice. Whether your interest lies in economic analysis, strategic management, or integrating engineering principles into business solutions, I am here to guide and support you throughout your final project study.

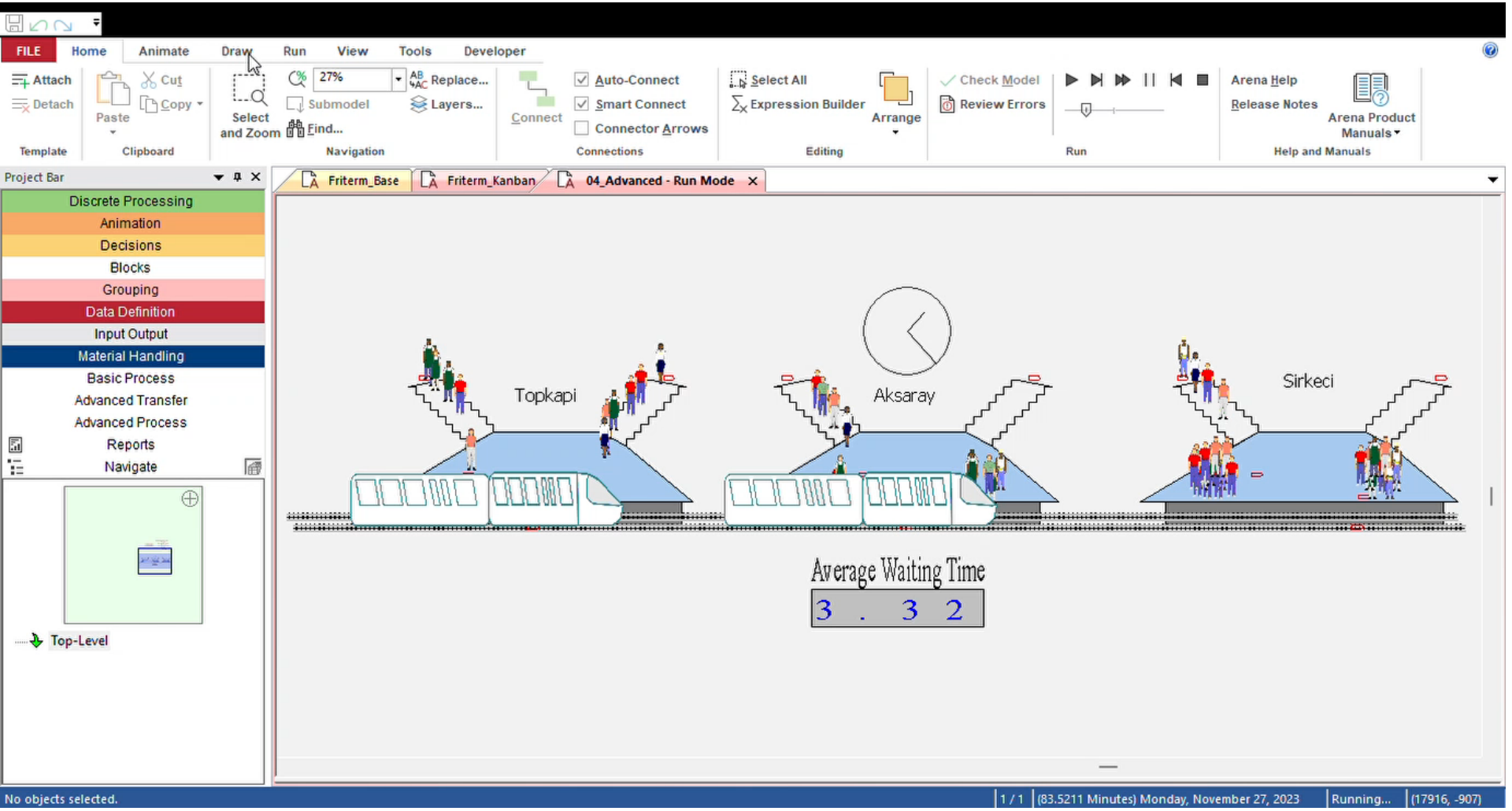
Assist. Prof. Dr.

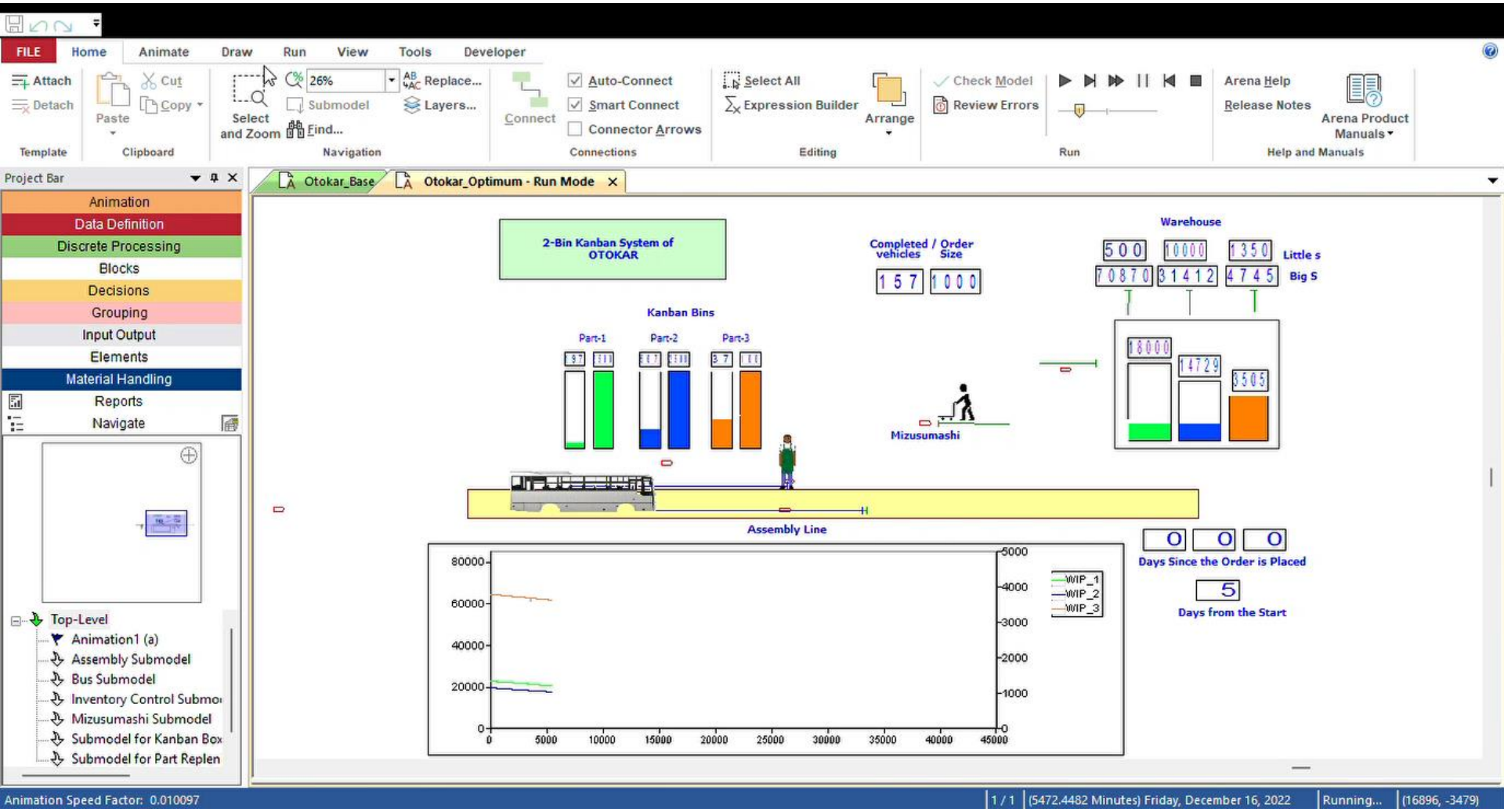
Okay Işık

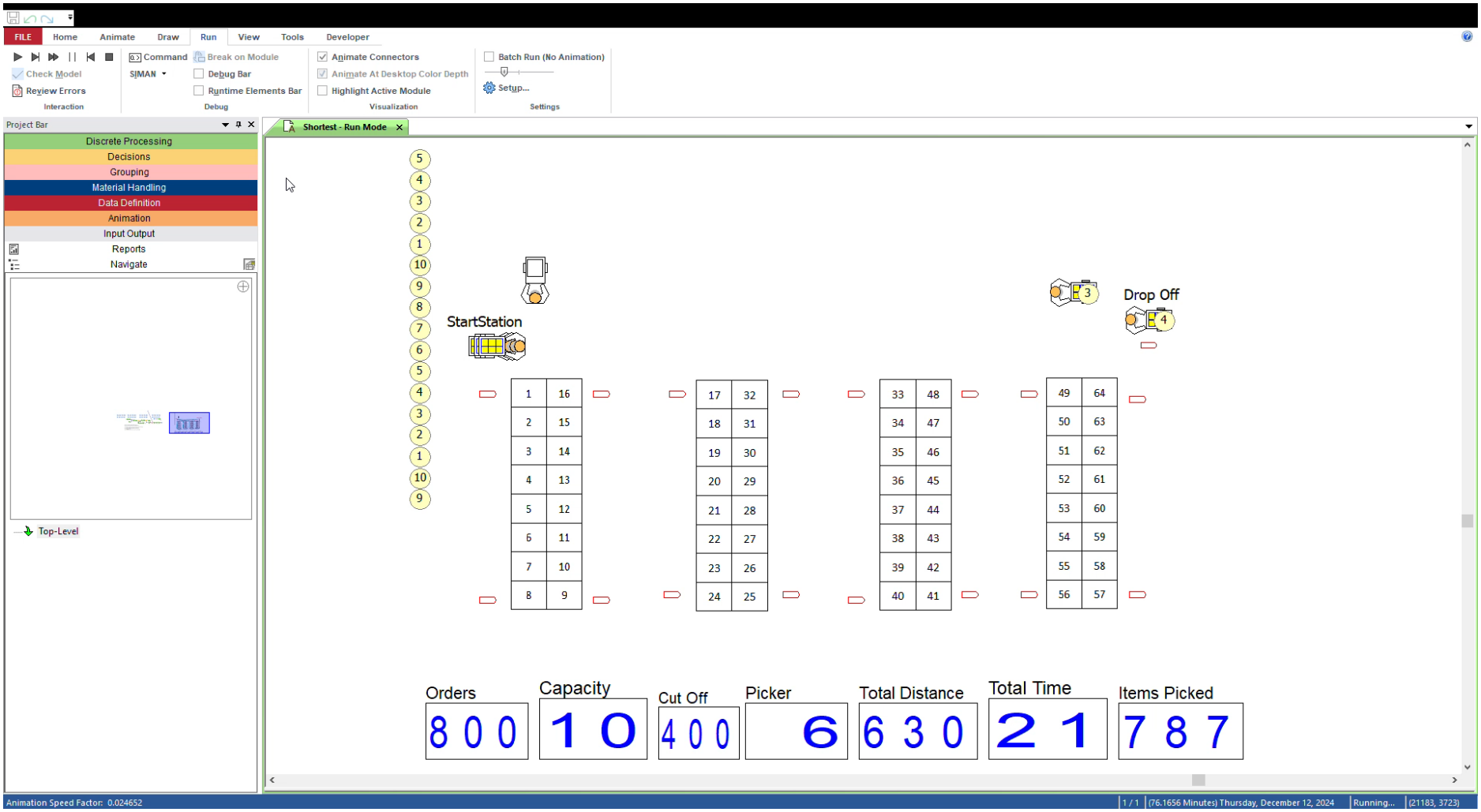
YEAR	Previous years' projects by Assist. Prof. Okay Işık	Optimization	Statistical Process Control	Design of Experiments	Discrete Event Simulation
2016-2017	Development of a high-precision slingshot via statistically designed experiments			√	
2018-2019	3-D bin packing optimization study	√			
2019-2020	Improving order picking operations via discrete event simulation in EKOL Logistics			√	√
2020-2021	Application of DMAIC cycle for manufacturing processes at a home appliance company: VESTEL		√		
2021-2022	Application of Kanban technique to storage system in an automotive company: OTOKAR			√	√
2021-2022	Reducing cycle time with discrete event simulation for an AC company: FRITERM			√	√
2022-2023	Determining optimum assembly line team assignment using mathematical modeling based on monthly TV production plan in ARÇELİK Company	√			


FILE
Home
Animate
Draw
Run
View
Tools
Developer
Attach
Detach
Paste
Cut
Copy
Select and Zoom
28%
Submodel
Find...
Replace...
Layers...
Connect
Auto-Connect
Smart Connect
Connector Arrows
Select All
Expression Builder
Arrange
Check Model
Review Errors
Arena Help
Release Notes
Arena Product Manuals
Template
Clipboard
Navigation
Connections
Editing
Run
Help and Manuals
Project Bar
Discrete Processing
Animation
Decisions
Blocks
Grouping
Data Definition
Input Output
Material Handling
Reports
Navigate
Top-Level
anime (a)
Friterm_Base - Run Mode
Friterm_Kanban
Countersink Process
Trimming Process
Batch 3 Before Welding
WIP
Order Size
Arrived Parts
Completed
3 1 1
1 4 2
6 0
Welding Process
Test Pool Process
Animation Speed Factor: 0.008078
1 / 1
(967.9375 Minutes) Tuesday, November 28, 2023
Running...
(21153, 1942)


FILE
Home
Animate
Draw
Run
View
Tools
Developer
Attach
Detach
Paste
Cut
Copy
Select and Zoom
19%
Submodel
Find...
Replace...
Layers...
Connect
Auto-Connect
Smart Connect
Connector Arrows
Select All
Expression Builder
Arrange
Check Model
Review Errors
Arena Help
Release Notes
Arena Product Manuals
Template
Clipboard
Navigation
Connections
Editing
Run
Help and Manuals
Project Bar
Discrete Processing
Animation
Decisions
Blocks
Grouping
Data Definition
Input Output
Material Handling
Reports
Navigate
Top-Level
anime (a)
Friterm_Base
Friterm_Kanban - Run Mode
Press Process
Cell Placement Process
Countersink Process
Trimming Process
WIP
25
20
15
10
5
0
0
1000
2000
3000
4000
5000
6000
Order Size
New Parts
Completed
3 1 1
1 2 9
1 2 1
Welding Process
Painting Process
Test Pool Process
Animation Speed Factor: 0.030815
1 / 1
(1735.0214 Minutes) Wednesday, November 29, 202
Running...
(23693, -1269)

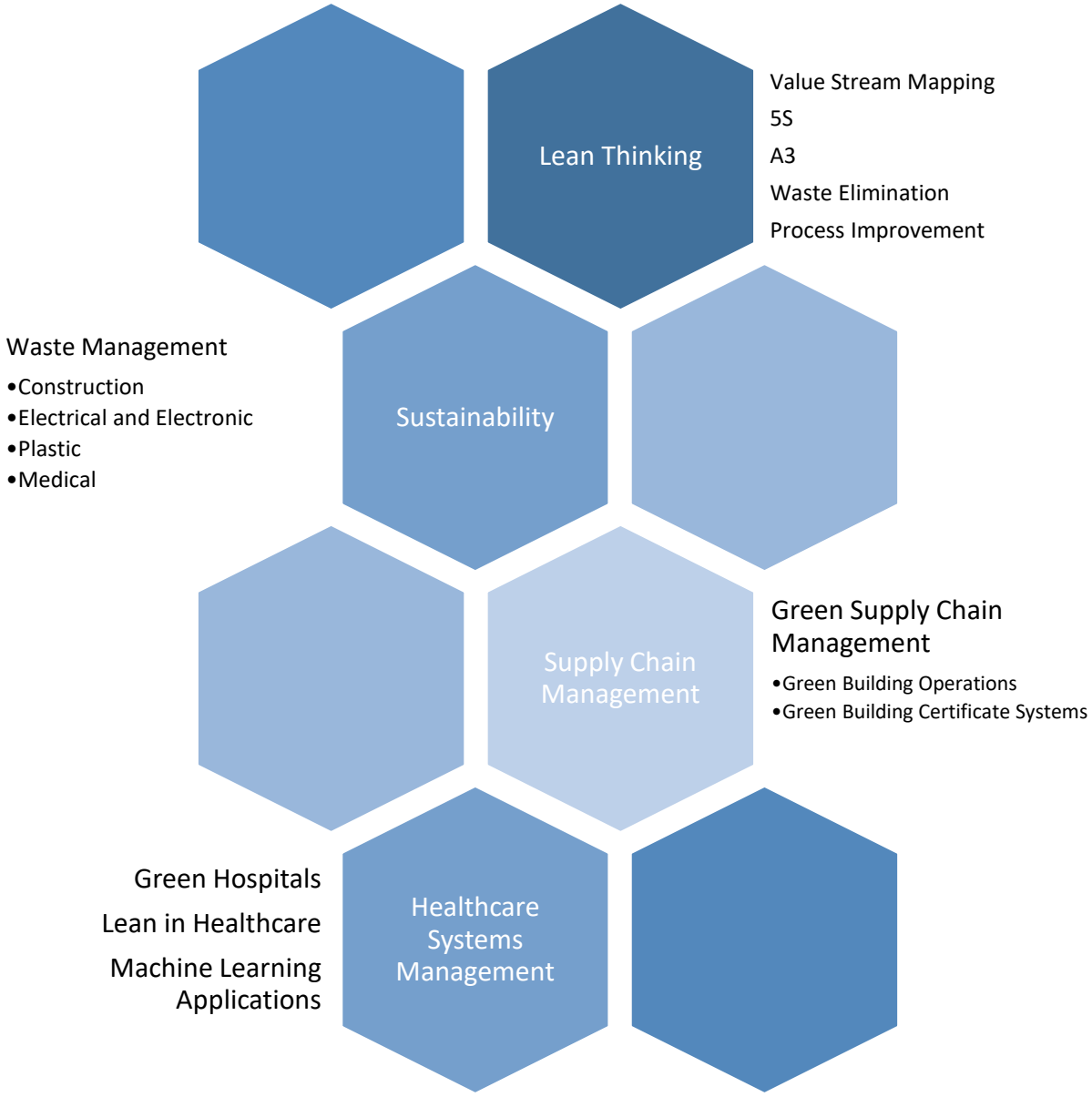

FILE
Home
Animate
Draw
Run
View
Tools
Developer
Attach
Detach
Template
Paste
Cut
Copy
Clipboard
Select and Zoom
27%
Submodel
Find...
Replace...
Layers...
Navigation
Connect
Auto-Connect
Smart Connect
Connector Arrows
Connections
Select All
Expression Builder
Arrange
Editing
Check Model
Review Errors
Run
Arena Help
Release Notes
Arena Product Manuals
Help and Manuals
Project Bar
Discrete Processing
Animation
Decisions
Blocks
Grouping
Data Definition
Input Output
Material Handling
Basic Process
Advanced Transfer
Advanced Process
Reports
Navigate
Top-Level
Friterm_Base
Friterm_Kanban
04_Advanced - Run Mode
Topkapi
Aksaray
Sirkeci
Average Waiting Time
3 . 3 2
No objects selected.
1 / 1
(83.5211 Minutes) Monday, November 27, 2023
Running...
(17916, -907)


FILE
Home
Animate
Draw
Run
View
Tools
Developer
Attach
Detach
Template
Cut
Copy
Paste
Clipboard
Select and Zoom
26%
Submodel
Find...
Replace...
Layers...
Navigation
Connect
Auto-Connect
Smart Connect
Connector Arrows
Connections
Select All
Expression Builder
Arrange
Editing
Check Model
Review Errors
Run
Arena Help
Release Notes
Arena Product Manuals
Help and Manuals
Project Bar
Animation
Data Definition
Discrete Processing
Blocks
Decisions
Grouping
Input Output
Elements
Material Handling
Reports
Navigate
Top-Level
Animation1 (a)
Assembly Submodel
Bus Submodel
Inventory Control Submo
Mizusumashi Submodel
Submodel for Kanban Box
Submodel for Part Replen
Otokar_Base
Otokar_Optimum - Run Mode
2-Bin Kanban System of OTOKAR
Completed / Order vehicles
Size
157
1000
Warehouse
500
10000
1350
Little s
70870
31412
4745
Big S
Kanban Bins
Part-1
Part-2
Part-3
18000
14729
3505
Mizusumashi
Assembly Line
0
0
0
Days Since the Order is Placed
5
Days from the Start
80000
60000
40000
20000
0
5000
4000
3000
2000
1000
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
WIP_1
WIP_2
WIP_3
Animation Speed Factor: 0.010097
1 / 1
(5472.4482 Minutes) Friday, December 16, 2022
Running...
(16896, -3479)


FILE
Home
Animate
Draw
Run
View
Tools
Developer
Command
Break on Module
Check Model
SIMAN
Debug Bar
Review Errors
Runtime Elements Bar
Animate Connectors
Animate At Desktop Color Depth
Highlight Active Module
Batch Run (No Animation)
Setup...
Interaction
Debug
Visualization
Settings
Project Bar
Discrete Processing
Decisions
Grouping
Material Handling
Data Definition
Animation
Input Output
Reports
Navigate
Top-Level
Shortest - Run Mode
StartStation
Drop Off
Orders
800
Capacity
10
Cut Off
400
Picker
6
Total Distance
630
Total Time
21
Items Picked
787
Animation Speed Factor: 0.024652
1 / 1
(76.1656 Minutes) Thursday, December 12, 2024
Running...
(21183, 3723)

Assist. Prof. Dr.

Tuğçe Apaydın


Lean Thinking
Value Stream Mapping
5S
A3
Waste Elimination
Process Improvement
Sustainability
Waste Management
•Construction
•Electrical and Electronic
•Plastic
•Medical
Supply Chain Management
Green Supply Chain Management
•Green Building Operations
•Green Building Certificate Systems
Healthcare Systems Management
Green Hospitals
Lean in Healthcare
Machine Learning Applications

Prof. Dr. Murat Ermiş

Research Interests

- *Modeling & Optimization*
- *Computational Intelligence*
- *Data Analytics*
- *Multi-Objective Dynamic Optimization Problems*
- *Simulation*

Application domains: examples

Scheduling

Vehicle Routing

Analytics in Industry

Warehouse Management

Disaster Management

U-space Flow Optimization

Previous Graduation Projects

- *Flexible Flow-Shop Scheduling For Cutting-Tool Manufacturing In Turkish Aerospace Industries (YAEM 2025)*
- *Metro Türkiye'de Yeni Bir Mağaza Lokasyonu Seçimi için Çok Kriterli Karar Verme (YAEM 2025)*
- *Airline crew pairing optimization: a column generation approach (YAEM 2024 and ISPR2024)*
- *3D container loading problem*
- *Aircraft crash analysis using data mining techniques (ASYU – IEEE conference)*
- *Improving inventory management through customer segmentation and demand forecasting in GOLF dondurma*
- *Optimization of Raftürk's production processes*
- *Inventory management for wire harness assembly line in Forchner*
- *Prediction of last kilometer delivery requests in Ptt cargo*
- *Simulation and improvement of warehouse operations of LCW e-commerce.*
- *Application of AHP and ANP methods to electric vehicle selection*

Ongoing Projects

- *Flexible flow-shop scheduling optimization in aerospace industry*
- *Individual gait patterns in clinical biomechanics using AI/ML techniques*
- *Machine learning based dynamic air traffic flow optimization in high-density low-altitude airspace for future urban air mobility*
- *Last – mile logistics planning for disaster first responders: an agent-based simulation model*


Thank
You