

AIIS Challenges

for Students





Objectives of the report

- Coordinate tasks and ensure consistency in the proposed AIIIS educational program.
- Provide guidelines and information for uniformity and collaboration among project partners.
- Streamline implementation for enhanced effectiveness and impact.





Key-points of the report

- Focuses on the development and implementation of AI challenges within the AIS educational program.
- Involves the creation of a minimum of 10 challenges presented to student teams.
- Aims to assess students' AI knowledge and soft skills while solving real-world problems.
- Emphasizes the role of AI and soft skills mentors in supporting students.
- Describes the certification process and its significance in recognizing student achievements.





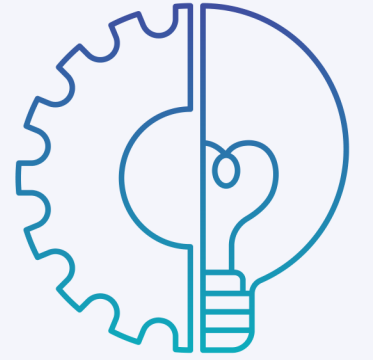
Next steps of the report

- Analyze and synthesize program outcomes and data.
- Identify patterns, trends, and insights.
- Make recommendations for program improvement based on feedback.
- Explore broader implications and potential scalability.
- Formulate comprehensive guidelines for future program iterations.





AIS Challenges



These are the steps for the implementation of Challenges:

01

Definition of process

Definition of collaborative framework and challenges

02

Challenges' Topics

Details for the Challenges included in the Pilot.

03

Enrollment & Collaboration Period

To examine the knowledge level acquired from the course

04

Final Presentation

Teams present their comprehensive solutions

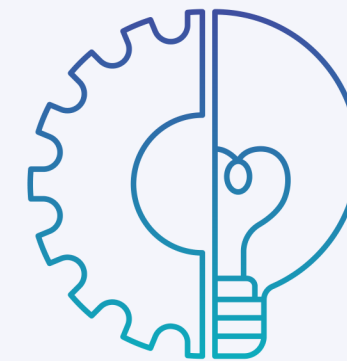
05

Student's Certification

Recognizes students' development, offering ECTS.



1. AIIS Challenges



This is why we are implementing the AIIS Challenges:

01

Allow students to apply AI knowledge and soft skills.

02

Collaboration with mentors enhances teamwork and problem-solving.

03

Certificates validate students' dedication to AI professional development.

04

Successful challenges contribute to broader AIIS program goals and promote continuous learning and innovation.



2.Challenges' Topics

1. Mania



Senario:

Hospital treating patients with Bipolar Disorder (Type I).



Goal:

Build a model to classify observations as before or after treatment based on symptom values.



2. Heart Attack Risk Analysis



Senario:


Risk Assessment for Heart Attack Patients



Goal:

Build a model able that can identify whether a patient is at risk of a cardiovascular event.





3. Framingham heart study



Scenario:

Analyzing Cardiovascular Disease Risk in the Framingham Heart Study



Goal:

Create a machine-learning model that can predict the 10-year risk of a participant to suffer a cardiovascular event, although the challenge is open to different kinds of analysis.



4. Maternal health risk



Scenario:

IoT-Based Risk Monitoring for Pregnant Women's Care



Goal:

Investigate which health conditions are the strongest indications for health risks during pregnancy.





5. Heart failure



Senario:

Predicting Mortality by Heart Failure for Cardiovascular Disease Management



Goal:

Build a model that can classify whether a patient survived or not, based on the descriptive features.



6. Hepatitis C



Senario:

Predictive Analysis for Blood Donor and Hepatitis C Patient Classification



Goal:

build a model able that can predict:

- whether a patient:
 - is a blood donor
 - has Hepatitis C
- predict the exact category a patient belongs to.



7. Stroke



Scenario:

Stroke Risk Prediction



Goal:

Build a model that can classify whether a patient had a stroke or not.



8. Diabetes



Scenario:

Diabetes Risk Assessment Using BRFSS Survey Data



Goal:

- Assess the feasibility of predicting an individual's diabetes likelihood using select BRFSS survey questions.
- If successful, this analysis may enable the creation of a shorter questionnaire for identifying diabetes or high-risk individuals.



9. Breast cancer



Scenario:

This dataset aims to differentiate between benign and malignant breast mass samples by analyzing cell nuclei features in digitized images obtained through fine needle aspiration.



Goal:

Build a model that can classify whether a sample is benign or malignant.



10. Fetal health



Scenario:

Monitoring fetal health using cardiotocograms (CTGs) to prevent child and maternal mortality.



Goal:

Build a model that can predict fetal health using the features extracted from the cardiotocograms.





3. Enrollment & Collaboration Period

- Students choose their challenge through the enrollment process.
- Enrollment process has a duration of 2 weeks.
- The collaborative period last for 2 months with weekly video conferences of the team.
- Teams have dedicated mentors (technical and soft skills).
- Soft skills mentor fosters essential non-technical skills & Technical mentors fosters the team on AI and other technical issues.

AIIS Challenges aim for student engagement and skill development.





3.Enrollment & Collaboration Period

Support System for Students

- Students tackle challenges in transnational teams.
- Each group gets medical dataset, mentors, and a problem.
- Challenges apply AI/ML to real-world medical problems.
- Student's are encouraged to explore beyond given problems.
- It's been given access to platforms for AI model training and development.

Students gain practical experience and develop soft skills.





3.Enrollment & Collaboration Period

Role and Guidelines for Mentors

Mentors have a critical role in AIIIS Learning Program:

- AI Mentor: Guides technical aspects.
 - Dataset exploration,
 - algorithm selection,
 - model tuning.
- Soft Skills Mentor: Develops non-technical skills. Facilitates
 - Communication, Teamwork, Adaptability
 - Brainstorming, Presentation, and more.

**SWOT analysis is being used for
tracking students' development and evaluation**





3. Enrollment & Collaboration Period

Guidelines for both AI & Soft Skills mentors:

1. Establish regular communication with student teams.
2. Offer constructive feedback on both technical and soft skills.
3. Monitor progress and address challenges promptly.
4. Mentor's role in fostering professional development.

Guidelines for AI mentors:

1. Promote ethical and responsible AI practices.
2. Ethical considerations in AI solutions.

Guidelines for Soft Skills mentors:

1. Effective support enhances student skills.
2. Encourage collaboration and team-building.



Mentor's guidance contributes to program success!



4. Final Presentation

- Each team will deliver a comprehensive presentation of their solutions.
- The presentation highlights collaboration, technical, and soft skills.
- Teams demonstrate collective problem-solving and effective communication.
- It's a significant way to showcase skills and achievements.
- The course of challenges concludes on December of 2022.
- Evaluation assesses proficiency in AI and soft skills.





5. Student's Certification

Certification in the AllS Program:

- Certification is vital for academic and professional growth.
- Certification regulations vary by university.
- Universities determine recognition and accreditation and the number of ECTS.
- AllS validates acquired knowledge and skills.
- Credentials boost academic and professional prospects.
- Certificates demonstrate active engagement and commitment.



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for more!**



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