TITLE

MILAGE LEARN+: Digital Certification with Blockchain

LAB & PEOPLE

- Name of the hosting lab: Department of Electronic and Informatics Engineering
  Website: https://milage.ualg.pt/

- Supervisor name and contact: Paula Ventura Martins (pventura@ ualg.pt)

TOPIC OF THE INTERSHIP

- Scientific context of the internship

The intention of this thesis proposal is to develop a new version of MILAGE LEARN+ with the issuance of secure digital certificates.

The MILAGE LEARN+ application (MathematIcs bLended Augmented GamE) was the main outcome of a project launched in 2015 led by the University of Algarve. MILAGE LEARN+ is associated with the concept of "mobile pedagogy based on the belief that mobile devices can support self-directed learning and student autonomy" (González et al., 2018). The approach aims to improve students' performance through an interactive tool, for the student and for the teacher, serving as a support tool for distance and face-to-face learning.

In order to motivate students to complete courses, the next version of the MILAGE LEARN+ app will integrate the issuance of certificates of course completion. However, ensuring the authenticity of the certificates issued represents a challenge for distance learning platforms. The authentication, decentralization and encryption mechanisms provided by Blockchain technology are offering a solution to this problem.

Goals and work plan:

The main goal of this work is to implement a new version of the MILAGE LEARN+ application that integrates Blockchain technology enabling the creation, modification and validation of digital certificates.

Keywords Blockchain and encryption

Bibliography

González Pérez, A., Bidarra, J., Figueiredo, M. y Godejord, B. (2018). Breaking barriers in learning math: architecture of the MILAGE Learn+ App. En ARTeFACTo 2018: 1st International Conference on Transdisciplinary Studies in Arts, Technology and Society (119-123), Lisboa: Artech-International.

- Tasks and duties entrusted to the student:

Tasks	Description
A	Related work
B	Analysis of the application (actual version)
C	Requirements elicitation (new system). Definition of the system architecture
D	Implementation and tests
E	Conclusions and write the thesis document

- Skills to be acquired or developed: System Modelling, Distributed Systems, Programming.

PROFILE OF THE DESIRED STUDENT

- Minimum level of study required: Master Student
- Field(s) of study: Computer Science
- Scientific skills: Data analysis, problem identification, propose solutions.
- Language skills required: English

THE INTERNSHIP ASSIGNMENT:

Desired duration of the internship (in months): 6 months
Desired Starting date of the mission: September
Indicative weekly schedule: *35h / week*
Remuneration: *Not available*
Erasmus grant: Application should be made by the student at the sending institution
Internship agreement: *an internship agreement will be signed.*

To SEA-EU students:
If you're interested please send your CV and letter of motivation to the scientist in charge, pventura@ualg.pt.