Stuart Hallifax

Computer Science PhD student

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Education

2014	**Bachelor**, *Université de Caen Normandie*, Caen, *Graduated with honours*.
2016	**Computer Science Master specialising in Artificial Intelligence**, *Université Claude Bernard Lyon 1*, Lyon, .

Master internship

Title	*Conception of collaborative pedagogical scenarios using interactive tabletop surfaces.*
Supervisors	Jean-Charles Marty , Benoît Encelle, and Karim Sehaba

PhD Thesis

Adaptive gamification of digital teaching resources.

From march 2017	LIRIS, SICAL, Lyon
Supervisors	Audrey Serna, Jean-Charles Marty & Elise Lavoué.
Summary	My thesis is a part of the LudiMoodle project, financed by the e-FRAN project, a part of the "Investissements d'Avenir" (PIA2). This project joins the LIRIS and ECP laboratories, the PAPN from Université Lyon3, and the EduNao company. This project aims for the conception, testing, and validation of a new type of gamification, an adaptive gamification of digital teaching resources (Moodle) to increase secondary school student motivation.

My main responsibilities during my PhD project are

- A trace model, allowing for the collection, analysis, and visualisation of user activity. This information will serve to better understand student profiles, as well as their motivation.
- A game element model containing a collection of appropriate game mechanics for such environments
- An adaptation model, that defines a certain number of heuristics that will link student profiles to related game elements. Links that can and should evolve over time.

The objective of my thesis is therefore the production of a model that allows the dynamic adaptation of game elements to learner profiles, based learner activity, and fixed characteristics.

Past experience

Research

January - April 2014	**Research project**, Université de Caen. Conception and evaluation of various AI methods for a board game. Under the supervision of G. Bonnet.
January - February 2015	**Research project**, Unviersité Claude Bernard Lyon 1. Simulation and analsys of real time gamepad data. Under the supervision of E. Guillou.
February - June 2016	**Research internship**, *LIRIS SICAL team*. Conception of collaborative pedagogical scenarios using interactive tabletop surfaces. Paper published ad ECGBL.

Technical work

May - June 2014	**Internship**, *Malkyrs Studio*, Caen. Design, development, and implementation of an AI system for a connected and evolving trading card game.
August - October 2016	**Full-time engineer**, *Malkyrs Studio*, Caen. Development of a tutorial scripting system, a matchmaking system, and a simple AI system for a connected and evolving trading card game. My duties also involved user activity analysis for statistical purposes.

Languages

English	**Native speaker**
French	**Bilingual**

Programming skills

Languages	Java, C/C++/C#, Python, ReLogo, Bash
IDE	Eclipse, Unity 3D, Visual Studio

Teaching

September 2017	**Project management and software engineering**, *Master 1 Computer Science Université Lyon 1*, Both practical and project work.
January - Mai 2018	**Web languages and protocols**, *Licence 3 IAE Université Jean Moulin Lyon 3*, Lectures and practical work.
2018 - 2019	**Introduction to programming**, *2nd year engineering students*, INSA Lyon, Practical work only.

Research projects

2017-2020	**LUDIMOODLE project**, *Financed via the e-FRAN project from the "Programme d'investissement d'avenir", operated by the "Caisse des Dépôts"*.

Publications

International conferences with peer review

H. Stuart, A. Serna, J.-C. Marty, G. Lavoué, and E. Lavoué. Factors to Consider for Tailored Gamification. In *CHI Play*, Barcelona, Spain, Oct. 2019

H. Stuart, A. Serna, J.-C. Marty, and E. Lavoué. Adaptive gamification in education: A literature review of current trends and developments. In *European Conference on Technology Enhanced Learning (EC-TEL)*, Delft, Netherlands, Sept. 2019

S. Hallifax, K. Sehaba, B. Encelle, and J.-C. Marty. Creation of gbl scenarios for multi-device environments. In *10th European Conference on Games Based Learning*, 2016

S. Hallifax, A. Serna, J.-C. Marty, and E. Lavoué. A design space for meaningful structural gamification. In *CHI'18 Extended Abstracts*, 2018

Others

S. Hallifax. Dmsag une classification d'éléments ludiques pour la ludification adaptative. In *Rencontre des jeunes chercheurs (RJC) en EIAH*, 2018