Bujar **RAUFI**

Technology Centre: Centre for Applied Data Analytics and Machine Intelligence (CeADAR), TU Dublin
Academic Mentor: Luca Longo
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Company Mentor: Michele Berlingerio

Bujar received his bachelor's degree in 2003 on Information and Communication Sciences in the Faculty of Communication and Information Sciences, South East European University, Tetovo North Macedonia. In 2005, he obtained his master's degree from New Bulgarian University, Sofia, Bulgaria focusing on Internet Software Technologies. In 2011 Bujar was awarded with a Doctoral degree from Technical University of Sofia doing research on Design and Implementation of Adaptive Web-Based Systems Using Data Mining techniques and Semantic Web. He has been involved in different national and international research projects such as: Web and Mobile Accessibility for Blind and Visually Impaired People (WMA4VIP) (Project funded by Swedish STINT), MoccaMK (project funded by Swiss National Science Foundation) and SMART4ALL (An extensive network of Digital Innovation Hubs for boosting technology and business development in South, Eastern and Central Europe, H2020 funded project). His research interests involve: Cognitive Load, Human Computer Interaction (HCI), Semantic Information Systems and Artificial Intelligence.

Dr. Luca Longo
Luca completed a BSc (honours) and an MSc (awarded distinction) both in Computer Science at the University of Insubria (Varese, Italy), as well as a Postgraduate Diploma in Statistics and an MSc in Health Informatics (awarded distinction) at the University of Dublin, Trinity College (Ireland). At the same university Luca also successfully defended his PhD thesis in Artificial Intelligence. He holds a Postgraduate diploma in Learning and Teaching at Technological University Dublin, as well as an MSc in Applied e-Learning. He is a lecturer, covering both MSc and PhD courses in Computer Science and a leader of a team of post-graduated talented individuals working in Artificial Intelligence. His principal applied research focus is on the development of computational models of mental workload employing deductive knowledge representation and inductive machine learning techniques. His theoretical research is in Explainable Artificial Intelligence with focus on defeasible reasoning and argumentation theory. Dr. Longo has won the national teaching hero award in 2016. He is a member of SFI research centres, including ADAPT, ML-Labs, D-REAL and Enterprise Ireland research centres, including CEADAR. He founded the first international symposium on human mental workload and served the community of scholars chairing the 28th Irish Conference of Artificial Intelligence in 2020. He is the guest editor of two sections of the FRONTIERS journals Human Neuroscience and Neuroergonomics. He is also guest editor of a special issue on Explainable Artificial Intelligence of the MDPI Machine Learning and Knowledge Extraction journal.

Dr. Michele Berlingerio
Michele obtained his bachelor's degree at Uppsala university Sweden, Master's degree on Computer Science at University of Pisa and his PhD on Computer Science and Engineering at IMT Lucca Institute for Advanced Studies, Italy. Between July and August 2011, he was a research fellow at Rutgers University as well as research associate and post-doctoral research fellow at ISTI-CNR. Michele witnesses an outstanding record on industry as well working in companies such as IBM, Eaton and recently Novartis as a research staff member, manager of artificial intelligence and recently as director of AI Innovation Center. His research focus is on artificial intelligence and data science.

Novartis

Novartis is a global healthcare company based in Switzerland that provides solutions to the evolving needs of patients worldwide. Their presence is witnessed in Europe, North America and recently in the emerging markets of Asia, Africa and Latin America, where there is fast-growing demand for access to high-quality medicines and healthcare. Its mission as a big pharma company is to discover new ways to improve and extend people's lives by using science-based innovation to address some of society's most challenging healthcare issues. They discover and develop breakthrough treatments and find new ways to deliver them to as many people as possible.

Bujar's project

EMPOWER: Enabling Human Mental Workload in User Modelling for PersOnalized Web ExpeRiences

Data procreation on the Web has changed how users interact with it as an information space. Various devices impact the way how user interacts with information. This does not only profoundly change the user experience; it also obstructs the interaction by creating a degree of disorientation resulting in poor user engagement. Such disorientation results in a stressful condition while performing a web task. This reduces engagement, which is not tolerated by users resulting in fatigue and as a result they often abandon the web site. Alleviating user engagement by delivering personalized content and navigation measuring user stress levels within the realm of web, particularly when they are overwhelmed with data is of utmost importance. Although much work has been done to tackle the issue, not many approaches are measuring stress levels on the web and this is still regarded as an intrinsic and inevitable user feature. Traditional approaches on describing user behaviour on the web tend to represent the user engagement through characteristics such as: demographics, user goals and tasks, interests or skills and capabilities. However, little attention is given to factors such as user traits and moods.

The project Enabling Human Mental Workload in User Modelling for PersOnalized Web ExpeRiences (EMPOWER) aims to address this issue of user's engagement on the Web by extending traditional approach of describing user goals, preferences, and knowledge, known as User Models, by incorporating human stress factors on the modelling process. These models with human stress factors shall be used to deliver relevant, well targeted, and goal-oriented content to users on the web, ultimately enhancing the User Experience.