EMANUELA GUGLIELMI

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SUMMARY

Emanuela Guglielmi was born in Campobasso (Italy) on March 31th, 1997. She received a Master's Degree in Software Systems Security from the University of Molise (Italy) in 2021 defending a thesis on Software Reliability and Testing entitled "Generative Grammars and Deep Learning for Testing Voice User Interfaces" advised by Prof. Rocco Oliveto and Mr. Giovanni Rosa. She is currently a Ph.D. Student. at the Department of Biosciences and Territory of University of Molise, advised by Prof. Simone Scalabrino. Her research interests include automated testing and recommender systems for complex systems (e.g., virtual assistants and video games).

EDUCATION AND TRAINING

***Università Degli Studi Del MOLISE (CB)**, Pesche (IS), Italy*
PhD BEAT in Biology And Applied Sciences XXXVII
Thesis Topic:
Automated testing and recommender systems for complex systems
Graduate: I am enrolled in the 2nd year
Description:
Ph.D. Student. at the Department of Biosciences and Territory of University of Molise, advised by Prof. Simone Scalabrino. My research interests include automated testing and recommender systems for complex systems (e.g., virtual assistants and video games).
List of publications:

- **Towards Using Gameplay Videos for Detecting Issues in Video Games**

E Guglielmi, S Scalabrino, G Bavota, R Oliveto
arXiv preprint arXiv:2204.04182 (2022)

- **Supporting Video Game Maintenance by Mining Gameplay Videos**

E Guglielmi, S Scalabrino, R Oliveto
Doctoral Symposium (2022)

- **Sorry, I don't Understand: Improving Voice User Interface Testing**

E Guglielmi, S Scalabrino, G Bavota, R Oliveto
ASE (2022)

***Università Degli Studi Del MOLISE (CB)**, Pesche(IS), Italy, 10/2021*
Security of Software Systems
Duration of the study programme: 2 years
Principal subjects/occupational skills covered: The Master's Degree Course in 'Security of Software Systems' aims to train professionals capable of managing the entire lifecycle of a secure IT system with an in-depth knowledge of the legal aspects relating to the secure and confidential handling of IT data, as well as the storage and transmission of sensitive data. This professional figure will also be able to apply methodologies and technologies to conduct IT investigations, as well as to assess the degree of security of a software system.
Knowledge acquired, with a self-assessment (from 1 to 10):

- Cryptography (9)

- Network and software system security (9)
- Computer forensics and investigations (10)
- Statistical learning and big data (7)
- Software project management (9)
- Software reliability and testing (9)
- Automated Software Delivery (9)

Degree

- Age at graduation: 24
- Graduate: 110/110 cum laude

Thesis

Title: Generative Grammars and Deep Learning for Testing Voice User Interfaces
Language: English
Advisor: Prof. Rocco Oliveto
Abstract: In this thesis, we propose ARGOS (utterAnces vaRiant Generator for vOcal user interfaceS), an approach to automatically generate utterances for testing VUI systems. First, ARGOS takes as input a set of seed utterances defined by the developers and infers a generative grammar. Then, it automatically produces variations of the seeds by using such a grammar. Finally, ARGOS filters out utterances that are not semantically equivalent to the seed from which they were generated, using a RoBERTa model trained for this type of task. We experimented ARGOS on 20 Alexa skills. Our results show that (i) the variations generated by ARGOS are semantically equivalent to the input seed, and (ii) ARGOS allows to find more bugs compared to the standard tool offered by the Alexa Developer Console.

Università Degli Studi Del Molise *, Pesche (IS), Italy, 12/2019*
Bachelor Degree in Computer Science: **Computer Science**
Duration of the study programme: 3 years
Principal subjects/occupational skills covered:
The degree program in Computer Science at the University of Molise offers students a preparation that enables them to adequately face both the continuous evolution of the discipline and career advancement towards roles of responsibility. The program enables students to acquire theoretical, methodological, experimental and application skills in the fundamental areas of computer science as well as in some professional computer science areas, such as web and mobile application development, artificial intelligence, geographical information systems. In addition, the study program provides the basic skills to manage 'big data' effectively and efficiently and to understand the legal aspects of data management.
Knowledge acquired, self-assessed (1 to 10):

- Algorithms and data structures (9)
- Procedural (C) and object-oriented programming (Java) (10)
- Software design, maintenance and testing (10)
- Web and mobile technologies (8)
- Network and security (10)

Degree

- Age at graduation: 22
- Graduate: 110/110 cum laude

Thesis

- Title: SeeCB: Un'applicazione di supporto alla visita della città di Campobasso
- Language: Italian
- Advisor: Prof. Giovanni Capobianco
- Abstract: The thesis work concerned the development of an Android application, SeeCB, through which it is intended to stimulate tourists and citizens to go beyond what they often only observe of the city of Campobasso. The application offers information and multimedia content on the various characteristic places, facilitating the user's discovery of the city through the calculation of the visit route, built based on the preferences expressed by the user in terms of time available, type of route and places of interest. In this way, the user will have at his or her disposal on his or her smartphone a 'tailor-made' tourist guide defined through mathematical methods based on the theory of graphs known in the literature, declined on the problem of defining a route that satisfies the constraints defined by the user.

SKILLS

- Relationship Building
- Team Building
- Planning & Organizing
- Friendly, Positive Attitude

LANGUAGES

Italian: First Language

English: B1

Intermediate