Luigi Libero Lucio Starace

Formal methods for automatic test case generation

Tutor: Prof. Sergio Di Martino   co-Tutor: Prof. Adriano Peron

Cycle: XXXV   Year: 2019/2020

My Background

- M.Sc. Degree in Computer Science
  - Thesis: *"Model-based testing and Model Checking for Safety-critical Hierarchical Systems"*
- Ph.D. fellowship funded by *NetCom Group S.p.A.*

Research Field of Interest

Main field of interest is **software verification**:

- – Testing web applications;

- – Regression Test Prioritization;

- – Empirical Software Engineering studies;

- – Formal Specification and Verification techniques.

Summary of Study Activities

	Courses	Seminars	Research	Tutorship
First Year ECTS	30,7	7,9	32	1,6
Expected ECTS range	20 − 40	5 − 10	10 − 35	0 − 1,6

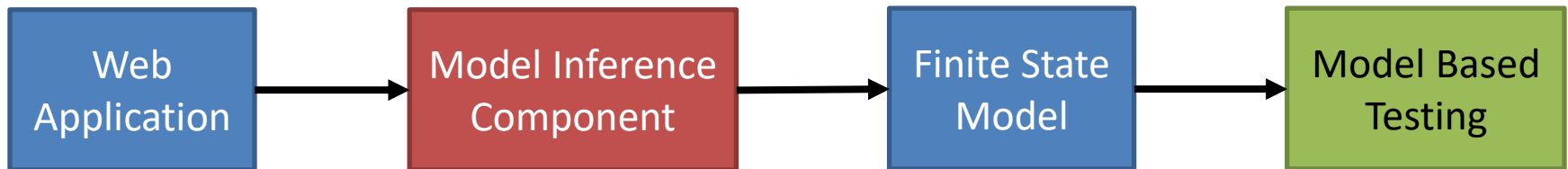Among others, I attended the following courses:

- Strategic Orientation for STEM Research & Writing (3,6 ECTS)
- Virtualization technologies and their applications (4 ECTS)
- Machine Learning (4 ETCS)

Attended conferences:

- *Empirical Software Engineering and Measurement (ESEM 2020)*

Main Research Activity: Overview

- Model Inference for Web Applications
  - To support model-based testing approaches

Web Application	→	Model Inference Component	→	Finite State Model	→	Model Based Testing

- **Objective:** improve web application testing process

- **Contribution:** define new similiarity metrics (using Tree Kernel functions) to detect near-duplicate states

Products: Journal Papers

IEEE Internet of Things Journal
Security-aware deployment optimization of cloud-edge systems in industrial IoT
Casola, V., De Benedictis, A., Di Martino, S., Mazzocca, N., & **Starace, L. L. L.** (2020)
Status: published

Software Testing Verification and Reliability **(STVR)**
Comparing the effectiveness of capture and replay against automatic input generation for Android graphical user interface testing
Di Martino, S., Fasolino, A. R., **Starace, L. L. L.**, & Tramontana, P. (2020)
Status: published

International Journal of Geographical Information Science **(IJGIS)**
Vehicular crowd-sensing: a parametric routing algorithm to increase spatio-temporal road network coverage
Asprone, D., Di Martino, S., Festa, P., **Starace, L. L. L.** (2020)
Status: under 2nd round of revision

Products: Conference Papers

32nd IFIP International Conference on Testing Software and Systems (ICTSS 2020)

Inspecting code churns to prioritize test cases

Altiero, F., Corazza, A., Di Martino, S., Peron, A., & **Starace, L. L. L.** (2020)

Status: accepted

Thank you for your attention