ANNA LABELLA

Personal data

Born in Rome, Italy, december, 9 -1948
Degree in Mathematics july, 25 -1970 by University of Rome.
Degree in Philosophy june, 19 -1989 by Gregoriana University.

Assistant Professor in Algebra from 1973
Associated Professor in Foundations of Mathematics from 1980
Full Professor in Computer Science from 2000
From june 2001 to october 2004 Director of Studies in Computer Science
always by the Faculty of Sciences of the "Sapienza" University of Rome, now Facoltà di Ingegneria dell'Informazione, Informatica e Statistica.

From 1992 to 1995 invited teacher of Logics at the Philosophy Faculty of Gregoriana University.
In different times from 1975 to 2000 teacher of Foundations of Mathematics and Mathematical logic in the curricula of Mathematics and Computer Science.
Teacher of Mathematical logic for the PhD in Mathematics, Model Theory for the PhD in Computer Science in La Sapienza and di Logic and Computer Science in the university of Siena.
Presently teacher of Mathematical methods in Computer Science and Formal Methods in Software for Computer Science curricula at "Sapienza" University of Rome.

From 1981 to 1987 scientific assistant of "Istituto di Analisi dei Sistemi e Informatica - C.N.R".
Teacher at Banach School in Warsaw (Poland).
Visiting professor at IRISA in Rennes (France) and at University of Szeged (Hungary).
Responsible for European Community project HCM EXPRESS 1994-97, site of Rome.
Reviewer of Mathematical Reviews and Zentralblatt
Chair of the workshop FICS'01.
Chair of Didamatica congress in april 2010 in Rome.

Scientific Curriculum

In the first years I was mainly interested in category theory, in particular enriched category theory and change of basis (collaboration with Stefano Kasangian, Max Kelly and Ross Street) and, in this area, a general theory about change of base was developed.

As an application of Category Theory to Computer Science a model of nondeterministic regular expressions as trees was developed (collaboration with Rocco De Nicola, Flavio Corradini, Daniele Gorla). Results in the sense of (finite) axiomatizability where obtained.
I proved also that the category of finite trees is equivalent to the free semidistributive category on the same alphabet.

In collaboration with Zoltan Ésik, Stephen L. Bloom and Ernest G. Manes equational properties of iteration in algebraically complete categories were studied and an axiomatic characterization was provided .

After different experiences in the field of human-computer interaction including artistical musical performances and applications in the cultural heredity I was involved in a group developing tools for disability support (Paolo Bottoni and al.).

In the last years, while continuing some of the old research, language theory assumed more importance in my interests, due to the collaboration with Paolo Bottoni, Gheorghe Paun, Victor Mitrana and other eminent scientists in that area. In particular results about bio-inspired computing were obtained.

Selected Recent Papers

Kasangian, S., Labella, A.: Conduché property and Tree-based categories.
J. Pure Appl. Algebra, 214, (2010), 221-235.

De Nicola, R., Gorla, D., Labella, A.: Tree-Functors, Determinacy and Bisimulations, Math. Struct in Comp. Science, 20, (2010) 319-358.

Kasangian, S., Labella, A., Montoli, A.: Generalising Conduché's theorem,
Applied Categorical Structures 19(1) (2011) 277-92.

Bottoni, P., Labella, A., Manea, F., Mitrana.V., Petre, I. and Sempere, J. M.: Complexity-preserving simulations among three variants of accepting networks of evolutionary processors.
Natural Computing, 10 (1), (2011) 429-445.

Bottoni, P., Capuano, D., De Marsico, M., Labella, A., Levialdi, S.: DELE: a Deaf-centered E-Learning Environment Chian May Journal of science, 38 (3) (2011) 31-57.

Bottoni, P., Kasangian, S., Labella, A.: Spatial and Temporal Aspects in Visual Interaction,
J. of Visual Languages and Computing, **23** (2) (2012) 91-102.

Bottoni, P., Capuano, D., De Marsico, M., Labella, A.: DELE framework: an innovative sight on didactics for deaf people, Je-LKS, Journal of e-Learning and Knowledge Society **8**, (3) (2012) 165-174.

Bottoni, P., Borgia, F., Buccarella, D., Capuano, D., De Marsico, M., Labella, A.: Stories and signs in an e-learning environment for deaf people, Special Issue of j. universal access in the information society, **12**, (4), (2013) 369-386, DOI: 10.1007/s10209-012-0283-y

Bottoni, P., Labella, A., Mitrana, V.: Accepting Networks of Evolutionary Picture Processors
Fund. Inf, 131 3-4 (2014) 337-349, DOI 10.3233/FI-2013-860

Bordihn, H., Bottoni, P., Labella, A., Mitrana, V.: Networks of Picture Processors as Problem Solvers, Soft Computing, (2016), 1-13, DOI: 10.1007/s00500-016-2206-y

Bottoni, P., Labella, A., Mitrana, V.: Networks of Polarized Multiset Processors, Journal of Computer and System Sciences, Available online 23 November 2016
DOI 10.1016/j.jcss.2016.11.006

Bottoni, P., Gorla, D., Kasangian, S., Labella, A.: A doctrinal approach to modal/temporal Heyting logic and non-determinism in processes, Math. Struct in Comp. Science, in press. (2017)

Bottoni, P., Labella, A., Mitrana, V.: Prefix-Suffix Square Reduction, Theor. Comp. Science, in press. (2017)