Ludovico Battista

Contact Information

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Nationality	Italian
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Education

2016 - present **Graduate Student in Pure Mathematics**, *Università di Pisa*, Pisa.
I am finding myself very interested in Riemannian Geometry, with a specific attention to hyperbolic manifolds, especially in low-dimension.

2013/14 - 2015/16 **Bachelor Student in Pure Mathematics**, *Università di Pisa*, Pisa, Bachelor Degree in Mathematics, 110/110 cum laude, 13/05/2016.
Bachelor Dissertation: "Crescita di gruppi: un gruppo con crescita intermedia" (Group growth: a group with intermediate growth).
Dissertation Topic: The topic is the existance of a group with intermediate growth. At the beginning there are the definitions of group growth and the exposition of some of its proprieties. Then some connections with the fundamental group of Riemannian manifold are studied: the main results in this section are two Milnor's theorems that link the growth of the volume of universal cover's balls with the growth of the fundamental group of a manifold. At the end, we show a group with intermediate growth, following a Grigorchuk's example.
Advisor: Prof. Roberto Frigerio.

2008/09 - 2012/13 **High School Student**, *Classical Lyceum "Mario Pagano"*, Campobasso (CB), High School Diploma, 100/100, July 2013.

Scolarship

2016/17 - 2017/18 **Scholarship for Mathematics Master students**, *Istituto Nazionale di Alta Matematica*.
I ranked first in the national test for this scolarship.

2013/14 - 2015/16 **Scholarship for Mathematics students**, *Istituto Nazionale di Alta Matematica*.
I won this scolarship for academic achievement, and I succeeded in renewing it for the whole duration of my Bachelor's Degree.

Experience

September 2017 - February 2017 — **Part-time Counseling (Counseling) - Department of Mathematics.** I won a competition announcement to begin a collaboration with the university. My job was to conceive and write a brochure to promote the university's educational offer to high-school students. I also held a lecture where I introduced the graph theory.

June 2016 - July 2017 — **Part-time Tutoring (Tutorato alla Pari) - Department of Mathematics.** I won a competition announcement to begin a collaboration with the university, and I succeded in renewing it for the second half of the year. My job was to tutor other students, assisting them with their queries and problems: for example, how to draft a study plan, the documents necessary to enroll in the faculty and helping (especially first-year students) with problems in mathematics.

Skills

Language skills

Italian	Mother tongue
English	Intermediate
French	Basic, A1

Computer skills

Matlab	Intermediate
LaTeX	Intermediate
C Language	Basic

Graduate Coursework and Contents

- **Algebra 2** (30/30 cum laude)
- **Elements of algebraic geometry** (27/30)
- **Geometry and differential topology** (30/30 cum laude)
- **Elements of algebraic topology** (30/30 cum laude)
- **Advanced algebra** (30/30 cum laude)
- **Advanced analysis** (28/30)
- **Advanced geometry** (30/30 cum laude)
- **Numerical methods for Markov chains** (30/30 cum laude)
- **Model theory** (30/30)

Undergraduate Coursework and Contents

- **Laboratory of Communication through computer** (qualified)
- **Arithmetic** (30/30)
- **Physics I** (29/30)
- **Analytic geometry and linear algebra** (30/30)
- **Fundaments of programming with laboratory** (30/30 cum laude)
- **Mathematical analysis 1** (30/30 cum laude)
- **Algebra 1** (30/30)
- **Numerical analysis with laboratory** (30/30 cum laude)
- **Scientific English** (qualified)

- **Elements of Set Theory** (30/30 cum laude)
- **Didactics Laboratory of computational mathematics** (qualified)
- **Mathematical analysis 2** (30/30 cum laude)
- **Elements of probability and statistics** (30/30)
- **Geometry 2** (30/30 cum laude)
- **Probability** (30/30)
- **Field and Galois theories** (30/30 cum laude)
- **Physics II** (30/30)
- **Mathematical analysis 3** (29/30)
- **Mathematical Logic** (29/30)
- **Physics III with laboratory** (22/30)
- **Dynamical systems** (26/30)
- **Experimental laboratory of computational mathematics** (qualified)