



Letizia D'Achille

CONTACTS

✉ dachilleletizia@gmail.com
☎ +39 3277140401
🌐 Website
in letizia-dachille
📍 letizia-dachille
📍 Via delle Pernici 7, Sutri (VT), Italy

SKILLS

PROGRAMMING

Proficient:

Python • Java • C • C++ • Magma •
CoCoA • Matlab

Basic:

MySQL

MARKUP

LaTeX • HTML (Basic)

LANGUAGES

Italian (Mother tongue) •
English (C1 Level) • French (Basic)

OTHER SKILLS

- Proficient in Microsoft Word, Excel and Powerpoint
- Proficient in both Microsoft Windows and macOS environments
- Competent in Linux environment

COURSEWORK

GRADUATE

- Coding Theory and Applications (30L)
- Computational Algebra (30L)
- Algebraic Cryptography (30)
- Formal Techniques for Cryptographic Protocol Analysis (30)
- Applied Cryptography (30)

UNDERGRADUATE

- Arithmetic (30)
- Algebra 1 (30)
- Algorithms and Data Structures (30L)
- Scientific Computing (30L)

ACADEMIC INTERESTS

Coding Theory • Computational algebra •
Cryptography • Programming •
Numerical analysis

EDUCATION

MASTER DEGREE IN MATHEMATICS

| CRYPTOGRAPHY CURRICULUM - STAGE ORIENTED

UNIVERSITY OF TRENTO

Lug 2022 - Ongoing | Trento, Italy

Master's degree in Mathematics with emphasis on computational algebra, coding theory and cryptography

GPA: 30 / 30

BACHELOR DEGREE IN MATHEMATICS

| COMPUTATIONAL CURRICULUM

UNIVERSITY OF PISA

Aug 2018 - May 2022 | Pisa, Italy

Graduation mark: 110 / 110 Cum Laude • a.y. 2020/21

GPA: 28.76 / 30

LICEO SCIENTIFICO

| OPZIONE SCIENZE APPLICATE

LICEO SCIENTIFICO "P. RUFFINI"

Sep 2013 - Jul 2018 | Viterbo, Italy

Graduation mark: 100 / 100 Cum Laude

BACHELOR'S THESIS

LINEAR ALGEBRA ON MODULES AND BUCHBERGER'S ALGORITHM

ALGEBRA LINEARE SU MODULI E ALGORITMO DI BUCHBERGER

Supervisor: Professor Massimo Caboara

Description:

Analyzing the computation of the normal form of a module via Buchberger's algorithm, we compare this procedure with the Gauss and Euclidean algorithms, and we study it as a tool for computing operations between modules. We provide a unified treatment of the theory, in which systematic comparisons have been developed from considerations that are not generally formalized in literature.

The work is supported by examples developed using CoCoA.

🔗 [Link to thesis](#)

PROJECTS

GRADUATE

- Algebraic Cryptography - 🔗 Kasumi and Coppersmith's Index Calculus (Magma)

UNDERGRADUATE

- Algorithms and Data Structures - 🔗 Urban route planner (C++)
- Computational Lab - 🔗 Burrows-Wheeler transform of finite automata (C++)
- Scientific Computing - 🔗 Arnoldi-PET algorithm for PageRank (Matlab)

AWARDS

2022 **De Componendis Cifris** scholarship for students enrolled in the Master Degree in Mathematics - Curriculum Cryptography

2018 **INDAM** scholarship for enrollment in courses of study in Mathematics

CERTIFICATIONS

1ST TERM SOLFEGGIO

ISTITUTO SUPERIORE "G. BRICCIARDI"
Jul 2013 | Terni, Italy
Reading, Theory, Dictation, Ear Training

EXPERIENCE

TUTOR

University of Trento
Sep 2023 - Ongoing | Trento, Italy
Tutoring for students of the BSc in
Mathematics and Physics

SPORTELLLO AMICO | TUTORING

Liceo Scientifico "P. Ruffini"
2015 - 2018 | Viterbo, Italy
Tutoring for students of secondary school

OTHER INTERESTS

Computers • Video games •
Board games • Trekking • Piano •
Travelling

EXTRACURRICULARS

PHC | SYSTEMS ADMINISTRATOR

University of Pisa • Department of Mathematics
Dec 2018 - May 2022 | Pisa, Italy

- Member of a group of technicians that maintains a network of Linux computers and offers various services for mathematics students
- Maintenance of the web server poisson.phc.dm.unipi.it

OLIMPIADI ITALIANE DELLA MATEMATICA

2014 - 2018
Participation in several editions, both in individual and team competitions

GCMUN | DELEGATE

Feb 2018 | New York, NY
International Model UN conference

SUMMER SCHOOL MATH&MORE

Convitto Nazionale "Principe di Napoli"
Sep 2016 | Assisi, Italy

- Summer camp for development of excellence in mathematics
- One of two students selected to attend the school