

ALESSANDRO TAMAI

Mathematician

Born in Treviso on February 24, 1995.

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EDUCATION

Master's degree in Mathematics

 University of Trieste

 2017-2020  Trieste , Italy

Final Mark: 110/110 (summa cum laude)

Bachelor's degree in Mathematics

 University of Trieste

 2014-2017  Trieste , Italy

Final Mark: 104/110

-  Erasmus program at "UCL: Université Catholique de Louvain-La-Neuve":

 Sept. 2017- Feb. 2017  Louvain-la-Neuve , Belgium

Diploma of Perito Chimico

Istituto Superiore Statale "Giorgi-Fermi"

 2009-2014  Treviso , Italy

Final Mark: 78/ 100

DISSERTATION WORK

Bachelor Thesis

Introduzione alla Teoria delle Perturbazioni di Sistemi Hamiltoniani Autonomi

- Reminder on symplectic geometry and its relation with Hamiltonian systems.
- Liouville-Arnol'd Theorem and its consequences.
- Introduction to perturbation theory with a focus on Poincaré's negative results.
- Summary of the historical contrast between ergotic theory and perturbation theory in relation to Fermi's computational experiments.
- KAM Theorem and its similarities with Liouville-Arnol'd Theorem.

Master Thesis

Singular Solutions of Rolling Balls Model: a Topological View

- Lie groups and semisimple Lie algebras classification with a focus on the G_2 group.
- Division algebras: quaternions and their relations with the rotation of the three dimensional space; the octonions and their split form.
- The group G_2 as automorphism group of octonions and split octonions as consequence of the Lie group classification.
- Sub-Riemannian geometry and singular solutions in relation to the rolling balls problem.

TECHNICAL STRENGTH

C++



Python



MATLAB



MS Office



LaTeX



LANGUAGES

English



STRENGTHS

Hard-working

Decision Making

Creative

VOLUNTEER ACTIVITY

Trieste Science Fiction Festival

 October 2019  Trieste, Italy

- Science fiction film festival in Trieste, Italy.

Trieste Next

 September 2020  Trieste, Italy

- Scientific research festival in Trieste, Italy.

- Overview on the most recent results: relations between the model and quaternions, octonions and the G_2 group.
- Presentation of the research work's results: description of the geometric spaces of singular solutions, their topological properties and their relation with lens spaces.

UNIVERSITY PROJECTS

- "Flux Analysis for Competing Firms":
(Final exam of "Stochastic Modelling and Simulation" course)
Given a set of consumers and firms distributed on a geographic region, can we estimate how the consumers' choice depends on some given parameters? In the project I try to answer this question by design a mathematical model based on discrete Markov's chains and analyzing the simulations made by it python implementation.

SCIENTIFIC WORK

"Singular Solutions of Rolling Balls Problem"

Geometric Structures Research Seminar

📅 January 12, 2021 📍 SISSA, Trieste, Italy

- Speaker.

<https://sites.google.com/view/geometric-structures/>

"Singular Solutions of Rolling Balls Problem"

Geometry and Dynamical System Group Seminar

📅 April 19 2021 📍 UPC, Barcelona, Spain

- Speaker.

SCHOLARSHIPS

Postgraduate Fellowship

📅 April 2021 - July 2021 📍 SISSA, Trieste, Italy

WORK EXPERIENCE

Exerciser of "Geometria 1" (double assignment, ch. A,B)

Universita' degli Studi di Trieste

📅 October 2019- January 2020 📍 Trieste (Italia)

- Exercises sessions on the course's topics.
- Correction of practice tests.

Exerciser of "Geometria 3B"

Universita' degli Studi di Trieste

📅 March 2019- June 2019 📍 Trieste (Italia)

- Exercises sessions on the course's topics.

Exerciser of "Analisi 1" (double assignment, ch. A,B)

Universita' degli Studi di Trieste

📅 October 2018- January 2019 📍 Trieste (Italia)

- Exercises sessions on the course's topics.
- Correction of practice tests.

MaxMeyer Promoter

Leroy Merlin

📅 March 2014 - June 2014 📍 San Biagio di Callalta, Italy

- Preparation of paints through dedicated instrumentation.
- Shop assistant work in paints, hardware and building material aisle.

HOBBIES

Reading newspaper

I like to be informed about current economic and social events.

Music Addict

I love listening music of every genre and year.

Music Player

I play guitar and some piano, sinths, armonica... I also sing and compose music by using computer.

Movies Addict

I love watching new and old movies of all kinds.

Reader

I read books of all kinds, from novels to books of poetry.