Alessandra Marelli

Home : Via del Futurismo 31, 20138, Milano, Italy

Email: alessandra1.marelli@mail.polimi.it **Phone:** (+39) 3423209230

Phone: (+33) 745161826

Date of birth: 31/05/1997 **Nationality:** Italian

ABOUT MYSELF

I am a determined and resourceful person and I studied Mathematical Engineering at the Polytechnic of Milan. I chose the path of Computational Science and Computational Learning because of my strong interest in the following topics: functional analysis, partial differential equations and their numerical resolution, algorithms and scientific computing. I am curious, I enjoy exploring new places and learning new languages.

WORK EXPERIENCE

[02/11/2023 – Current]

PhD student

IFPEN

City: Rueil-Malmaison | **Country:** France

Study of preconditioned methods for nonlinear systems with a focus on the preconditioned Newton's method for the Richards equation.

[03/04/2023 – 29/09/2023]

Research engineer

Institut National de Recherche en Informatique et en Automatique (Inria), equipe SERENA

City: Paris | **Country:** France | **Business/sector:** Professional, scientific and technical activities

Analysis and implementation of a numerical simulation method for the transport of matter in fractured porous media.

Implementation of a new software module to simulate the transport by advection in a fracture network, and in a fractured porous medium. Validation of the software on a test case.

EDUCATION AND TRAINING

[2020 – 05/10/2023]

MASTER OF SCIENCE DEGREE IN MATHEMATICAL ENGINEERING

POLITECNICO DI MILANO https://www.polimi.it/

Address: Piazza Leonardo da Vinci, 32 , 20133, Milan , Italy | **Field(s) of study:** Computational Science and Computational Learning

Real and functional analysis.

Partial differential equations: analysis and their numerical treatment (elliptic problems, advection-diffusion problems, time-dependent problems, finite element method, spectral element methods, hyperbolic problems, domain decomposition method).

Mathematical and physical modeling in engineering: continuum mechanics and continuum thermodynamics, asymptotic analysis and ansymptotic regimes.

Algorithms and Scientific Computing: Object Oriented Programming (OOP) principle, C++, OpenMPI for parallel programming.

Artificial Neural Network and Machine Learning.

[03/09/2021 – 08/04/2022]

ERASMUS STUDY PROGRAM

ECOLE CENTRALE DE MARSEILLE www.centrale-marseille.fr

Address: 38 rue Frédéric Joliot Curie, 13451, Marseille, France | **Field(s) of study:** General Program - Master Mechanics, track Fluids and Solids

[24/09/2020] **BACHELOR OF SCIENCE DEGREE IN MATHEMATICAL ENGINEERING**

POLITECNICO DI MILANO https://www.polimi.it/

Address: Piazza Leonardo da Vinci, 32, 20133 , Milan , Italy | | **Final grade:** 97/110

[06/2016] **HIGH SCHOOL DIPLOMA**

LICEO SCIENTIFICO FONDAZIONE SACRO CUORE https://www.sacrocuore.org/

Address: Via Rombon, 78, 20134 , Milan , Italy | | **Final grade:** 94/100

[08/2014 – 06/2015] **INTERNATIONAL EXCHANGE YEAR SCIENTIFIC HIGH SCHOOL**

SAINT JOSEPH HIGH SCHOOL https://www.saintjoehigh.com/

Address: 453 N. Notre Dame Ave., 46617-2335, South Bend, IN, United States | | **Final grade:** Cumulative GPA: 4.238

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C2 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C2 **SPOKEN INTERACTION** C1

French

LISTENING C1 **READING** C1 **WRITING** B2

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Spanish

LISTENING B1 **READING** B2 **WRITING** B1

SPOKEN PRODUCTION B1 **SPOKEN INTERACTION** B1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

DIGITAL SKILLS

My Digital Skills

Operating Systems Software: Windows

Programming languages Software: Matlab, C++, Fortran

CAD systems Software: Autocad

SOCIAL & POLITICAL ACTIVITIES

[15/06/2017 – 30/10/2017] **CCS REPRESENTATIVE STUDENT FOR CIVIL ENGINEERING** POLITECNICO DI MILANO

I was elected student representative for Civil Engineering during my first year of University before changing major to Mathematical Engineering.

DRIVING LICENCE

Cars: B

HOBBIES AND INTERESTS

Track-and-Field

I practice track-and-field and I like to participate to middle distance races.