
Geotechnical Engineer

Expertise

Geomechanics, Numerical Simulation

Education

Ph.D. in Engineering Sciences (Geomechanics), 2022
INRAE RECOVER – Aix-Marseille Université, Marseille, France

Engineering Degree (Geophysics), 2018
EOST, Strasbourg, France

M.S. (Earth Sciences), 2017
EOST, Strasbourg, France

Professional Experience

2026 – Present	ITASCA France, Lyon, France Geotechnical Engineer
Jan. 2026 – Aug. 2026	ISTerre – Université Savoie Mont Blanc, Le Bourget-du-Lac, France Postdoctoral Researcher
2022 – 2025	INSA Lyon – LaMCoS Lab – TMI Team, Villeurbanne, France Postdoctoral Researcher
2018 – 2022	INRAE RECOVER Team, Aix-en-Provence, France Ph.D. Student
June 2017 – Dec. 2017	SAGE Entreprise, Grenoble, France Geophysical Engineer Intern
Jan. 2017 – June 2017	PGP – Oslo University, Oslo, Norway Master II Intern

Project Experience

Constitutive Modelling of Geomaterials: Analysis of friction and wear history in a seismic fault proxy-lab, combined with micro-imaging on contact surfaces and mineral structures to pave the way to a more unified tribological model in geometrically complex faults. Fundamental study of the inertial transition of idealized (quasi-2D) dry granular materials with DEM software YADE. Researching mechanical instability precursors at the mesoscopic scale (i.e., at the scale of a grain loop) in a quasi-2D granular material. Two complementary approaches based on grain loops in a quasi-2D granular material to define a second-order work at the mesoscale, in which cancellation is a precursor to the inertial transition.

Interdisciplinary Project Management: Project manager of two interdisciplinary projects: 1) "From mountain permafrost to construction materials: Deformation experiments in cold room", financed by ANR, ISTerre (geophysics), LOCIE (geotechnics), and EDYTEM (natural risks in mountain environments) labs sponsoring the project. 2) "DRAMA Project (Do rock fault asperities melt or abrade during earthquakes?)", financed by the ANR. Project on the wear and friction in seismic faults, with a tribology approach.

Experimental Work: Setup of an experimental device and protocol to conduct freeze-thaw cycles on concrete samples (made or collected in high-altitude structures) and on Aiguille du Midi granite samples. Characterisation of mechanical behaviour changes before and after the cycles through uniaxial tests. Operating, calibrating, improvement, and exploitation of an original pin-on-disk experimental device used as a seismic fault proxy lab (created by G. Mollon, A. Saulot, A. Ferrieux, and L. Lafarge.) Post-mortem studies of the pin and track contact surfaces of the seismic fault proxy lab (SEM, EBSD, optical microprobe, interferometer).

Numerical Modelling: Numerical twin of a seismic fault proxy lab (pin-on-disc) created with *MELODY* software (DEMxFEM). Numerical simulations of confined shear experiments in quasi-2D granular material (DEM). Application to gravity-driven movements with quasi-2D numerical simulations on titling slopes (DEM). Post-processing and valorisation of the experimental and numerical experiments (*MATLAB, Python*).

Technical Communication: Participation in workshops and seminars in France and worldwide, either with oral or poster presentations (EGU, AGU, ALERT workshop, Lyon-Leeds symposium, etc.).