ATTIAS ARIEL

MATHEMATICS & PHYSICS STUDENT

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EDUCATION

École Polytechnique **August 2018-Present**

B.S Mathematics And Physics

- Theoretical Mathematics: Linear Algebra, Differential Calculus, Fourier Analysis, Multivariable Calculus, Probability, Statistics.
- Applied Mathematics: Numerical Algebra/Analysis, Numerical Optimisation, Numerical Methods for ODE's, Image Processing.
- Physics: Newtonian Mechanics, Lagrangian Mechanics, Fluid Mechanics, Solid Mechanics, Geophysics, Structural Mechanics.
- Results: 3.99/4.00 C.G.P.A (1st Quartile of my Major).
- Award: "Outstanding student who has distinguished himself through his dedication to the École Polytechnique community and to the welfare of society".

WORK EXPERIENCE

Tractebel Engineering **June 2020-August 2020**

Civil Engineering Department

- Assigned to the study of the soil-structure interaction.
- State of the art of the analytical methods establishing structures' impedances.
- Validation of the different methods, for surface and embedded foundations, using results from the finite element method.
- Programming of a semi-analytical model describing piles' behaviours under loadings backed by European Civil Engineering Standards (Eurocode 7).
- Results similar to the finite element method combined to a better computational efficiency.

RESEARCH EXPERIENCE

École Polytechnique **December 2019-Present**

Solid Mechanics Research Assistant

- Working on a liquid lens controlled by electric impulses.
- Study of the relation between the input voltage, the sharpness of the displayed image and the relative standard deviations of its grey scales.
- Programming of the optical apparatus' autofocus taking into account possible deformations of the studied material.
- Application to high precision bio-mechanical tests using sets of optics: study of the behaviour of bones subjected to uniaxial stress.

PROJECTS

2017-Present

- **Bridge engineering:** Modelling, small-scale conception and testing of a truss bridge. Mechanical trials and data analysis on typical materials (Copper, Steel, Wood).
- **Drone performances**: Study of the performances of a drone in order to optimise facade thermography.
- **Transportable mobility aid for visually disabled people:** Conception of an object-detection technology based on the sonar principle. Realisation of a warning system by pressure around the wrist in the case of nearby obstacles.

PROGRAMMING LANGUAGES

- Python
- Excel
- Labview
- C#

LANGUAGES

- French (Native)
- English (Fluent)
- Spanish (Intermediate)

VOLUNTEERING

- BAFA certificate
- Counsellor in a Youth Association
- Tutoring

SPORTS

- National championship of indoor soccer (2015)
- Canoe-Kayak instructor certification (2018)