Alexandre Martinez

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*Data scientist working on hydrological issues in a changing climate. 2020 New Face of Civil Engineering. Have experience in research, teaching at academic and professional level, and outreach to public and public policy leaders.*

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| Core competencies**Data science – Climate change mitigation – Hazard modeling – Hydrologic extremes** |
| Selected Experience**Research assistant (current)** – *Center for Hydrometeorology and Remote Sensing (Irvine, CA)**Modeled* the impacts of extreme weather on crop’s quality and yield using a combination of ground and remote observations, modeled data, and machine learning techniques.*Developed* an online Google Earth Engine prototype for fast simulation.*Mentored* two students to developed web-based simulation tools of some models developed.**Instructor (2013-2016)** *– Texas Tech University* *(Lubbock, TX)**Taught* fluid mechanic at the upper-level, 4.5/5 at last evaluation.*Developed* my own curriculum, with emphasis on active learning activities.**Research assistant (2011-2013)** – *Center for research in Water Resources (Austin, TX)**Investigated* experimentally the behavior of mercury in capped sediment from Lavaca Bay, TX. *Trained* a student to perform mercury concentration analysis in sediments.**Intern (2011)** *– French National Center for Scientific Research (Lille, FRANCE)* *Coded* a portion (data process) of an 2D3C SPIV algorithm. *Documented* my algorithms on the research team’s server.**Volunteer (current)** – *2020-2021 Voices for Science Cohort, American Geophysical Union.*Competitive program for communicating the value and impact of Earth and space science to key decision makers, journalists, and public audiences. |
| Other skillsKnow how to develop efficient algorithms in Matlab (main), and Python/C++ (secondary). Know how to optimize code, use parallel computing techniques, use server or HPC, and write proper documentations in LiveScript or Jupyter.Applications: GIS (ESRI), FLUENT, COMSOL, AutoCAD, HEC-RASLanguage: French (Native), English (bilingual), Spanish (Fluent), German (Professional).Outreach activities* **Short course:** Climate change, Newport Harbor High School, Newport Beach, CA. 09/19. *Fund*: UC-Irvine’s Global Connect program.
* **Workshop:** Climate change’s impacts of water resources, 2019 Truckee Earth Day Festival.*Fund:* American Geophysical Union’s grant.

Honors* **2020** New Face of Civil Engineering, Professional Edition American Society of Civil Engineers.*National recognition of the next generation of civil engineering leaders.*
* **2017** Henry Samueli Endowed Fellowship: University of California, Irvine.
* **2013** Graduation with highest honors – Ecole Centrale de Lille.
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| Education**Ph.D.,** Civil Engineering, 2016-2020 (expected) – Dr. AghaKouchak, Dr. Davis University of California at Irvine – Center for Hydrometeorology and Remote SensingFund: *NSF 16-524: Innovations at the Nexus of Food, Energy and Water Systems (INFEWS)* Dissertation: *Modeling the impacts of local hydrological events on global food security.* **Master of Science** in Environmental and Water Resources Engineering, August 2011-2013 The University of Texas at Austin – Center for Research in Water Resources Dissertation: *Laboratory study of calcium-based sorbents impacts on mercury bioavailability.***Diplôme d’ingénieur**, August 2009-2011 Ecole Centrale de Lille (France) |
| Grants* Title: *Virtual Reality Exploration of Coastal Flooding*. – Korani, MartinezAgency: American Geophysical Union, $10,000 – 01/2019-07/2019**Developed** a framework to project 2D flood map int a 3D immersive environment.
* Title: *Climate change workshop*. MartinezFunding Agency: American Geophysical Union, $1,000 – 04/2019-04/2019**Developed** and **conducted** a workshop for Truckee Earth Day Festival.
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| Peer-reviewed publications Journal articles* TBA Spring 2020

Scientific and educational software* Martinez, 2019, “Climate change analysis using MATLAB”. Carleton College’s Teaching Computation in the Sciences Using MATLAB: Peer-Reviewed collection.
* Martinez, 2018, “Climate change and extreme values analysis”. Carleton College’s Teaching Computation in the Sciences Using MATLAB: Exemplary Teaching Collection.
* Hayatbini, Martinez, 2018, “Calculating and using Unit Hydrograph” Carleton College’s Teaching Computation in the Sciences Using MATLAB: Peer-Reviewed collection.
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| Selected peer-reviewed conferences & workshop* **Talk** – Martinez, Korani. OceanVisions. April 2019, Georgia Tech University, Atlanta, GA.“Coastal Flooding under climate change: a personal experiential learning approach”.
* **Workshop** – Martinez, at Truckee Earth Day Festival. April 2019, Truckee, CA.Short workshop on climate change and its impact on local hydrology.
* **Workshop** – Martinez, SERC. October 2018, in Carleton College, Northfield, MN.“Teaching Computation in the Sciences” workshops.
* **Workshop** – Korani, Martinez, October 2018. UC Berkeley, CA.“Scientific data analysis and visualization using Tableau”.
* **Poster** – Martinez, et al., AGU Fall Meeting. December 2019, Washington, DC.“Modeling the impacts of regional droughts on the global nutrition supply”.
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| Community Involvement* Leader of the California section of the French Alumni Association “Association des Centraliens” and “French Alumni”, two professional organization of more than 2,000 French graduates in the USA.
* Musician (Clarinetist since the age of 12 years old).
* Active member of ASCE OC section, AGU and AGU Hydrologic Student Section, and AAAS.
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