Alexandre Martinez

Ph.D. candidate Email: alex.m@uci.edu  
Department of Civil Engineering Tel: +1 (512) 419-8363  
University of California, Irvine sites.uci.edu/alexm Irvine, CA 92697

*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.*

|  |
| --- |
| 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 skills  Know 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-RAS  Language: 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. |
| Education  **Ph.D.,** Civil Engineering, 2016-2020 (expected) – Dr. AghaKouchak, Dr. Davis  University of California at Irvine – Center for Hydrometeorology and Remote Sensing Fund: *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, Martinez Agency: 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*. Martinez Funding Agency: American Geophysical Union, $1,000 – 04/2019-04/2019 **Developed** and **conducted** a workshop for Truckee Earth Day Festival. |
| 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. |
| 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”. |
| 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. |