Ernesto Martinez Paz

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EXPERIENCE

Graduate Researcher   2017 – 2023

Real Time Water Systems Lab & Environmental Biotechnology Lab – University of Michigan
- Development of open-source hardware, software, and digital solutions for monitoring and control of drinking water supply systems. Learn more at emarpaz.github.io
- Designed, built, and deployed first-of-its-kind drinking water quality wireless sensor network. Leveraged web services (Particle, InfluxDB and Grafana) for data management, visualization, and storage.
- Coded a data-driven control algorithm for real-time alerts and to actuate a wireless valve.

Environmental Socio-Techno Systems Lab – University of Michigan
- Used ethnographic methods to gather qualitative data from interviews with participants during site visits.
- Tailored text codes to extract information from qualitative data sets to answer targeted research questions.
- Hypothesized, tested, and quantified pathways linking intermittent water supply to tap water quality perception through statistical factor analysis and latent class analysis.

Graham Sustainability Institute – University of Michigan   2018 – 2019
- Mapped areas of perspectives, consensus, and conflict among Mexico City's water sector stakeholders. Completed research through systematic review of literature, structured interviews, and surveys of more than 30 subject matter experts and practitioners. Public report with recommendations to our client (Isla Urbana) available at graham.umich.edu/activity/18066

Internships

Operations Engineering – *Sanitation Districts of Los Angeles County (LACSD) – Carson, CA*   2017
- Designed pipe-isolation solutions in a wastewater treatment plant to make way for new treatment processes.

Local Planning Distribution Intern – *Southern California Edison – Santa Monica, CA*   2014 – 2016
- Support power distribution team with evaluation of customer power needs and design proposals.

EDUCATION

University of Michigan, Ann Arbor	**Ph. D. in Environmental Engineering**	Expected 2023
	Data Science Graduate Certificate	2022
	M.S in Environmental Engineering	2019
University of California Los Angeles (UCLA)	**B.S. in Civil and Environmental Engineering**	2016

PUBLICATIONS

Martinez Paz, Ernesto F., et al. "Wireless sensors for measuring drinking water quality in building plumbing: deployments and insights from continuous and intermittent water supply systems." ACS ES&T Engineering 2.3 (2021): 423-433. (PDF from nsf .gov)

Martinez Paz, Ernesto F., et al. "Toward the Autonomous Flushing of Building Tap Water: Characterizing temperature and ORP Sensor Response and Dynamics." IWA Journal of Hydroinformatics (2023) **[In Preparation]**

CODING SKILLS | INTERESTS

- R, Markdown ●●●●○
- GIS, C/C++ , Python ●●○○○
- Git ●○○○○

- Time series signal processing, linear regressions.
- Sensors, Electronics, and Environmental Robotics
- Cloud Computing, Machine Learning