RICH PAULOO, PHD

I'm a data scientist at LWA and spend most of my time in ${\tt R}$ automating ETL pipelines for sensor networks 🐧, building Shiny Apps and dashboards 💻, designing approaches with spatial statistics and hydrologic models, and generally wrangling lots of data.

I have a PhD in Hydrology and my dissertation is titled 'Emerging consequences of regional-scale aquifer depletion: data-driven and numerical models of well failure, basin salinization, and contaminant transport' (my exit seminar can be viewed here¹). Early in my PhD, I found that I really enjoyed data science and programming, and I used these years to sharpen those skills. My published research includes NLP and network analysis², spatial statistics³, and physical modeling of 3D, subsurface contaminant transport⁴.

I'm an #rstats nerd and automation/reproducibility fanatic. My favorite tools include tidyverse (dplyr, ggplot2, purrr), shiny, flexdashboard, plotly, DT, RMarkdown (for dashboards/reporting), sf, sp, raster, leaflet (for spatial data), and DBI for databases. A few projects I'm proud of include an R package to query water quality data \mathfrak{P}^5 , R data science curriculum \mathfrak{F}^6 , a dashboard that makes millions of water quality observations understandable ¹/₂, and a model that predicts the risk of wells going dry 4 glunded by Microsoft's Al for Earth Grant.



EDUCATION

University of California Davis

O Davis, CA

- · Published 5 scientific papers (3 first-author).
- · Won ~\$153,000 in national, compeitive grants and awards from NASA, Microsoft Al for Earth, AGU, and others.



B.S., Integrative Biology (minor in Conflict Resolution)

University of California Berkeley

Parkeley, CA

• Delivered departmental commencement speech⁹ to ~ 5,000 people.



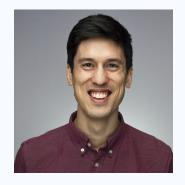
■ PROFESSIONAL & RESEARCH EXPERIENCE

present 2020

Data Scientist + Hydrologist

Larry Walker Associates

- Berkelev. CA
- · Programmed automated ETL pipelines for ~180 real-time sensor networks and dashboards.
- · Managed multiple six-figure contracts, scoped work, contributed to strategic marketing, and trained staff.
- · Frequent client communication in diverse groups with competing aims.
- · Ad hoc geostatistics, hydrologic modeling, remote sensing.



View this CV online with links at richpauloo.com/cv

CONTACT

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- frichpauloo.com
- **)** (415) 275-4981

FOREIGN LANGUAGE SKILLS

Conversational Spanish

LANGUAGE SKILLS

R	
SQL	
Python	
Bash	

Made with pagedown in R.

The source code is available at github.com/richpauloo/cv.

Last updated on 2021-08-26.

Data Scientist + Co-Founder present Remote Water Data Lab 2020 · Currently manage \$105k in contracts. · Build ETL pipeline and design strategic approach. · Co-developed r4wrds.com 2020 **Data Engineer** O Davis, CA **UC** Water 2018 • Built a data processing pipeline and web dashboard ¹⁰ for real-time groundwater data via a wireless sensor network. View paper¹⁷. **Graduate Student Researcher** 2020 **Q** UC Davis Fogg Lab 2015 · Process large hydrologic datasets, 3D numerical groundwater flow and contaminant transport models, & network optimization models. · Developed novel models of well failure, groundwater salinization, and contaminant transport in porous media. · Regularly use R, Python, Git, Bash, MODFLOW, RW3D, Paraview, Illustrator, AWS, Linux, ArcGIS, Envi, LaTeX. Data Lab Researcher 2019 **Q** UC Davis Computational Institute for Geodynamics (CIG) 2018 · NLP, text mining, and network analysis in R on a corpus of ~600 PDFs. · Developed an R Shiny dashboard 12 to understand the corpus. · Results published here 13.

SELECTED DATA SCIENCE WRITING Automating R scripts on Linux with cron¹⁴ Using Twilio to Text Myself After Long Running Jobs¹⁵ Race to the Bottom¹⁶ Exploratory data analysis and science journalism California well construction trends. Text Analysis of the Mueller Report¹⁷ Text mining and sentiment analysis. Tidy Chi Squared stats in infer¹⁸

View all of my blog posts here.



- 1: https://www.richpauloo.com/talk/2020-exit-seminar/
- 2. https://www.richpauloo.com/publication/cig/
- 3: https://www.richpauloo.com/publication/well-failure/
- 4. https://www.richpauloo.com/publication/vhgr/
- 5. https://caopenwater.github.io/sdwisard/
- 6: https://r4wrds.com/
- 7: http://calwaterquality.com/
- 8: https://www.gspdrywells.com/
- 9: https://www.youtube.com/watch?v=vBnvVL6XQTw&t=2s
- 10: https://www.richpauloo.com/project/lcsn/
- 11. https://doi.org/10.3390/w12041066
- 12: https://richpauloo.shinyapps.io/cig_nlp
- 13: https://ieeexplore.ieee.org/document/8827910
- 14: https://www.richpauloo.com/post/crontabs/
- 15: https://www.richpauloo.com/post/textme/
- 16: https://www.richpauloo.com/post/race-to-the-bottom/
- 17: https://www.richpauloo.com/post/mueller/
- 18: https://www.richpauloo.com/post/infer/