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SUMMARY

I locate and collect diverse types of data, then process, analyze, and present results in map format.

GEOGRAPHIC INFORMATION SYSTEMS / WEB / COMPUTER EXPERIENCE

- Currently preparing fault maps and supplying GIS support for Earthquake Engineering Research Institute's Earthquake Scenario for San Diego – Tijuana region. Assessed available fault datasets to choose best/most relevant data. Creating hazard layer for intersection of scenario rupture and infrastructure layers. Built web map and web app. Worked with City of San Diego and FEMA to migrate data to a larger server. Minor use of QGIS. [2014-2018]
- Volunteer in American Red Cross Information and Planning group, performing GIS work during wildfires and other disasters. Performed virtual damage assessment for Puerto Rico, post Hurricane Maria using before and after imagery – the first time this technique was used in a disaster. Prepared language maps using TIGER and county census tract data so Red Cross responders know they may need certain language speakers at a disaster response site. Designed and added new functionality to Red Cross web/GIS interface, making it more intuitive to use, saving volunteers' training time. Created maps for volunteers to install smoke alarms at requested sites in mobile home parks. Prepared weekly Situational Report for weather impacts on operations. Have used geocoding, OpenStreetMap in disaster recovery efforts. [2013-2018]
- Wrote Python scripts to fix broken links in map (.mxd) documents for earthquake insurance company that was migrating servers. [2014-2015]
- Built the first 3D geologic framework model of the San Diego / Tijuana area for a regional groundwater resources study. The purpose of the project was to understand the size / volume of local aquifers that could potentially store extra water during the rainy season and release water during the dry season. Cooperators and consultants have used the model successfully to predict stratigraphy during drilling. Procedures: Combined and processed surface and subsurface geology data from 7 geologic datasets from San Diego and northern Baja California, merged them to create a cross-border geologic map used as the top surface for the 3D model. Interpreted depth points from oil exploration wells, test holes, USGS multiple-completion wells, production water wells, wells drilled for monitoring and irrigation, and interpreted offshore seismic reflection profiles to provide depth data for the model, then generated stratigraphic surfaces using ArcMap Spatial Analyst and RockWorks to present a 3D image in EarthVision. [2008-2012]
- Wrote or updated much of the HTML, PERL, and JavaScript code for the USGS Mojave Water Resources website with interactive Google map page. Prepared groundwater (depth to water) point and contour line data for web format, and wrote FGDC metadata for publications: http://pubs.usgs.gov/sir/2007/5097/ - and updated for: http://pubs.usgs.gov/sir/2011/5234/. [2008-2011]
- Built a file geodatabase to provide information for water authorities to revise their pricing structure based on land use (mainly crops) vs. water resources (groundwater regions, water distribution, and administrative units). [2008-2009]
- Created / maintained custom websites from concept to "live" for over 15 years. Determined needs of target audience, developed software and hardware requirements, created / expanded / redesigned client's web layout, built storyboard, uploaded site to the server, tested development and live servers, maintained client's site - full software lifecycle. Built animated e-mails, embedded QuickTime movies into Flash websites. Webmaster for San Diego Association of Geologists, a site which includes CGI/PERL scripts to collect meeting registrations and food preferences, with a PayPal pre-payment option. http://www.sandiegogeologists.org/ [1997-2018]
- Developed avionics training product for military. Designed application as browser based - to run from a CD or installed on the user's computer, but ready to convert to SCORM, using XML out capability to connect to an external database when a Learning Management System became available; proactively ensured functionality by testing on many platforms and browsers. Teamed with storyboard producer (content expert) and artists to make the computer based training work. [2005-2007]
- GIS/mapping tools and skills: 7+ years GIS experience, work with ESRI, ArcGIS (9.x – 10.5.x), ArcMap, ArcCatalog, ArcScene, ArcINFO, Spatial Analyst, USGS, TIGER, SanDAG, SanGIS,

Google map data files, RockWorks, AutoCAD; prepare files for EarthVision, write metadata, and write/query/run batch and model processes with Modelbuilder and Python. [2008-2017]
- Web tools and skills: HTML (hand code using Dreamweaver, BBEdit, Textwrangler, or Notepad as editor), CSS, CGI, PERL, JavaScript, Photoshop, Flash, ActionScript, Server Side Includes, and iFrames. [1996-2018]
- Can work with PCs, Mac, Sun, networks, minis, mainframes, MS Windows, Mac OS, UNIX, Linux, and have used development environments Joomla, MAMP, and Google Sites.
- Databases: developed flatfile databases with CGI/PERL. Input well data into National Water Information System (NWIS). Built small database using Local Shared Objects in Flash with ActionScript, minor work with Access. Helped develop a national geological / geophysical database (NGDC) to archive data and allow free access to information.
- Updated / maintained code in many programming languages, troubleshot, provided user support.
- Customer service oriented, responsive, adaptable, trouble-shooter, problem solver.

GEOLOGY / ENVIRONMENTAL EXPERIENCE
- Prepared maps: analyzed drill logs and prepared cross sections, geologic, groundwater gradient, geochemical/contaminant concentration (contour) and site maps - presented data using AutoCAD. Drew contour maps and other maps from sketches and converted blueprints to CAD format. Prepared boring and well logs using gINT.
- Environmental Geology - Soil assessment: observed / sampled soil/rock at hazmat sites (primarily LUST), scheduled and supervised drilling and excavation crews, described soil borings, checked soil chemistry results, calculated soil volumes, monitored air quality during drilling operations, tested soil for geotechnical and hydrological properties and wrote site assessments for regulatory agencies. Conducted Phase I environmental investigations including interviews of tenants/residents/neighbors concerning possible hazardous materials and historic land use at properties being sold or refinanced and prepared reports. Closed contaminated soil site at former auto center. Groundwater assessment: checked / analyzed groundwater level and quality results, prepared ~100 quarterly and monthly reports for regulatory agencies. Collected information from numerous sources and wrote NPDES permit/ application to discharge remediated groundwater to a storm drain flowing into the Tijuana River.
- Technical writing: conducted library research, obtained bids, developed costs, and wrote proposals for environmental assessment and remediation, prepared HMMD remediation workplans, analyzed the data, hand-drafted maps, and wrote assessment (Phase II) or soil verification reports for 12 underground storage tanks and 11 oil water separators. Analyzed / processed various types of geological data and wrote technical reports (15+ years), also wrote software user's manuals, proposals, and web content.
- Legal: assisted in discovery, provided analysis and presentation for expert witness testimony.
- Research / data analysis in marine geology: visually examined and described deep-sea sediment “mud-logging”, sampled and microscopically / paleontologically analyzed marine geological materials, conducted library research, created databases to handle searches on geological materials at Scripps Institution of Oceanography, hand-drafted maps, wrote proposals, operated seismic and other geophysical equipment at sea, collected, analyzed, and interpreted data, wrote research reports. Analyzed geochemical data from seawater with gas chromatograph system, provided quality control, interpreted data, programmed computer to prepare hydrocarbon concentration maps, and generated plots based on other parameters such as seawater temperature. Wrote report to client (oil company). Maintained / repaired equipment.

EMPLOYMENT
- CARO-LION Enterprises, San Diego, CA, 1997-present, Web Developer, GIS Contractor.
- U.S. Geological Survey, CA Water Science Center, San Diego, CA, 2008-2012, Geographer.
- ARINC, San Diego, CA, 2005-2007, Web Programmer.

EDUCATION
- GIS Certificate of Performance - San Diego Community College - Mesa College, 12/2009.
- Software Engineering Certificate - Defense Conversion Center, San Diego State Univ., 3/1999.
- Multimedia Design and Management Certificate - DCC, San Diego State University, 4/1997.
- Rosenstiel School of Marine and Atmospheric Sciences, University of Miami, Miami, FL - graduate study in Marine Geology and Geophysics.
- BS in Geology, minor in Physics - Western Illinois University, Macomb, IL.