M Sercan Ceyhan

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I am a highly motivated water resources engineer with 10 years of consulting experience and a background in integrated hydrological modeling at regional or watershed scales, and water budget development. I have developed several IWFM and MODFLOW applications and contributed to the development and maintenance of many others. My passion lies in the convergence of traditional water resource engineering and cutting-edge technology. I'm particularly interested in the intersection of innovation, technology, and machine learning in water resources. I thrive on data analysis, numerical models, programming, GIS tools, and machine learning applications. I'm looking for opportunities where I can leverage my skills and experience to serve the community by advancing our water planning and management practices.

Experience

Technical Manager
Mar 2018-current

Woodard & Curran

Served as the Technical Manager and Lead for the development and maintenance of multiple integrated hydrologic modeling applications across California. Used parameter estimation software PEST and related tools to calibrate these models. Produced detailed land surface and groundwater budgets as part of GSP development and other planning studies.

Participated in several DWR pilot research projects such as IWFM-OPS, IWFM Multi-Model, AEM, and Flood-MAR. Led the development of models, developed Python based tools to process spatio-temporal data used in and produced by these models. Directed the development and implementation of a machine learning algorithm to process statewide AEM data to inform regional groundwater modeling efforts.

Created innovative tools for water management such as a framework to optimize groundwater substitution transfer pumping and a program using machine learning algorithms to forecast groundwater levels for a recharge facility.

Postdoctoral Researcher
Jan 2017-Oct 2017

UC Davis, Hydrologic Research Laboratory

Proposed and managed the project "A Comparison Study of IWFM and MODFLOW-OWHM Groundwater Modeling Software Packages" for DWR. Project goals were to identify the theoretical differences in the hydrologic conceptualizations in both models and to compare the model results with these differences in mind for Sierra Valley groundwater basin under changing climate conditions.

Associate Instructor
Sep 2016-Dec 2016

UC Davis, Dept. of Civil and Environmental Engineering

Prepared the course materials and instructed the course ECI144 Groundwater Systems Design.

Graduate Student Researcher
Jan 2013-Dec 2016

UC Davis, Hydrologic Research Laboratory

Team member in the project "Hydrological Modeling of the Upper Middle Fork Feather River Basin". Responsible for constructing an IWFM application for the Sierra Valley groundwater basin, and coupling with WEHY-HCM. Built the IWFM application using the national datasets and other available data. Used hourly Penman-Monteith equation to estimate potential crop water demand. Calibrated the application with PEST. Using the coupled modeling system, calculated the historical and future water balances under various climate projections.

Staff Engineer – Water Specialist
Mar 2011-Aug 2012

SRK Consulting Turkiye, Turkey

Conducted pumping test, hydrometry, and environmental monitoring field campaigns in proposed and existing gold mining sites around Turkey. Provided GIS, programming, and modeling support for dewatering and EIA studies.

Student Assistant
Nov 2008-Jul 2010

University of Stuttgart, Dept. of Hydrology and Geohydrology, Germany

Modified, configured, and applied the radar propagation model 'Surfillum' to the DWD radar station Dresden. As a result maps of potential ground clutter were produced and compared to clear sky radar measurements. Also, contributed to the lecture notes for Hydrometry and Remote Sensing course.

Skills

Modeling

- MODFLOW | 3+ years
- MODFLOW-OWHM | 1+ years
- IWFM-IDC & IWFM | 8+ years
- HEC Software | 1+ years
- PEST | 4+ years

Data Management

- ESRI ArcGIS | 14+ years
- AutoCAD | 10+ years
- GMS, Model MUSE
- MS Excel
- MS Access

Programming

- Python, Pandas, Geopandas and others
- Novice in Fortran.
- Can read and edit code in other languages.

Other

- Proficient with Linux environment and LATEX.

Education

Dec 2016 **Ph.D. in Civil & Environmental Engineering**
from University of California, Davis
Dissertation: "Fokker-Planck Solution of the Theis Equation", PI: Levent Kavvas

Sep 2010 **M.Sc. in Water Resources Engineering and Management**
from University of Stuttgart, Germany
Thesis: "Development of a transfer model to predict groundwater levels from percolation data provided by a physically based soil water balance model", PI: Andras Bardossy, Roland Barthel

Jun 2008 **B.Sc. in Environmental Engineering**
from Middle East Technical University, Turkey
Project: Simulation of Precipitation Fields by a Stochastic Weather Generator for Design Discharge Estimations, PI: Kahraman Unlu

Memberships

Groundwater Resources Association (GRA), GRACast Subcommittee Secretary

California Water and Environmental Modeling Forum (CWEMF)

American Society of Civil Engineers (ASCE)