IVÁN DAVID GARCÍA TRIANA

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SUMMARY

Internationally experienced civil engineer with a strong background in statistics and mathematics. Qualifications include a MSc in hydro-systems (hydro-informatics) and a PhD in applied mathematics. Five years of experience as consultant for engineering projects in fields that include: hydrology, water/gas distribution networks, coastal modeling and oil and gas reservoir modeling. Five years PhD research project on data assimilation where an innovative method for model order reduction was developed. Pragmatic and perceptive about practical innovative ideas. Excellent leadership skills and strong communication and interpersonal abilities. Enthusiastic and inspiring worker who takes the actions needed to lead projects to a successful end. Goal-focused and passionate about work with an out-of-the-box mindset and a versatile attitude aimed at solving challenging problems.

EMPLOYMENT

Since 2013, ***Data analyst and history matching for oil industry and other applications***
TNO - Mathematical modeling and data assimilation.

Implementation of data assimilation techniques for oil and gas reservoirs and consultant for modeling optimization:

- Probabilistic models in data analyzes.
- Implementation of history matching methods for assimilation of seismic data.
- State estimation of gas distribution networks.
- Uncertainty analysis of bridge crack propagation models.

2007 – 2014, ***Implementation of data assimilation for coastal morphodynamic models.***
Delft University of Technology - Morphodynamic Modeling and Applied Mathematics.

Developed a novel ensemble based approach (Ensemble model reduced 4DVar) for model order reduction that significantly facilitates its implementation for big, complex models

2012 – 2013, ***Data processing and data assimilation for sediment transport modeling.***
Deltares - Information analysis and data assimilation.

Assessment of environmental impacts on the North Sea due to dredging in the port of Rotterdam.

- Statistical data analysis for the Donar-Dia field information of Turbulence in the North Sea.
- Implementation of a data assimilation scheme to optimize the Delwaq model of the North Sea.

2004 – 2007, ***Free Lancer***
System analysis and optimization in the fields of hydrology, hydraulics and ecology.

- Hydrological budgets estimation and hydraulic analyses for environmental impact mitigation.
- Strategies implementation to mitigate city growth environmental impact in urban wetlands based on the use of artificial wetlands.
- Broad experience in applying geo-statistical tools and multivariate analyses for projects on spatial and temporal characterization of water quality.

Projects on Eco – Hydrology

- Hydrological and hydrodynamic analysis of La Vaca and Tibanica wetlands
- Ecologic and hydrodynamic restoration of Jaboque wetland

Projects on Hydrology and GIS

- Assessment of the national hydro energetic potential: IDEAM (National Weather Service)
- Bogota's water quality observation network evaluation and optimization
- Hydrological characterization of the Chingaza and los Nevados national natural parks

Projects on Water distribution Networks

- High risk areas assessment of La Cira gas field due to high pressure water network failure
- Estimation of the domestic water consumption profile and commercial losses
- Technical losses minimization for Bogota´s water distribution network.

EDUCATION

Doctor of Philosophy: Applied Mathematics, Delft University of Technology. **2014**
Delft, The Netherlands. *Towards a data assimilation system for coastal morphodynamic models.*

Master of Science: Hydro-systems, Pontificia Universidad Javeriana. **2007**
Bogota, Colombia.

Bachelor of Science: Civil Engineering, Pontificia Universidad Javeriana. **2004**
Bogota, Colombia.

LANGUAGES

Spanish: Native **English:** Proficient **Dutch:** Basic level

SOFTWARE KNOWLEDGE

- Microsoft Office & Project
- Java, C#, Python & Visual Basic
- Matlab & Maple
- ArcView & ArcMap
- Delft3D (Deltares) and Eclipse (Schlumberger.)
- GeoServer, PostGres and PostGIS

RECENT PUBLICATIONS AND PRESENTATIONS

- I. D. Garcia, H. Schuttelaars, G. E. Serafy, and A. Heemink, "Ensemble model reduced 4DVar for parameter estimation in coastal morphodynamic models. Study case: Egmond aan Zee.", (Journal of Geophysical Research) Pending submission.
- I. D. Garcia, G. E. Serafy, A. Heemink, and H. Schuttelaars, "Towards a data assimilation system for morphodynamic modeling: bathymetric data assimilation for wave property estimation", Ocean Dynamics, vol. 63, no. 5, pp. 489–505, Apr. 2013.

PROFESSIONAL REFERENCES

Available upon request.