



Name **Ioana Ileana POPESCU**
Year of birth 1964
Nationality Romanian
Present position Associate Professor of Hydroinformatics
Years with current employer 2001 – present

Researcher IDs

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EDUCATION

- 1982-1987** Graduate Civil Engineering (Major: **Hydraulic engineering**) with *Distinction*, faculty of Civil Engineering Polytechnical Institute "Traian Vuia", Timisoara, Romania
- 1989-1994** Graduate of Mathematics, (Major: **Informatics**), Faculty of Mathematics West University of Timisoara, Romania.
- 1995-1997** M.Sc degree, with *Distinction*, in River Engineering at International Institute for Hydraulics, Infrastructure and Environment, Delft, The Netherlands.
- 1992-1998** Ph.D. degree awarded by "Politehnica" University of Timisoara, in **Computational Hydraulics** (Thesis title: "Application of numerical methods to the determination of hydrodynamic pressures on reservoirs")
- 2011** University Teaching Qualification (UTQ), Delft University of Technology, Delft, The Netherlands

EMPLOYMENT RECORD and PROFESSIONAL EXPERIENCE

- 2013 - now** Associate Professor of Hydroinformatics, Department of Integrated Water Systems and Governance, UNESCO-IHE Institute for Water Education, Delft, The Netherlands.
- 2004 - 2012** Senior Lecturer in Hydroinformatics, Department of Integrated Water Systems and Governance, UNESCO-IHE Institute for Water Education, Delft, The Netherlands.
- 2001 - 2003** Lecturer in Hydroinformatics, Department of Hydroinformatics and Knowledge Management, UNESCO-IHE Delft, The Netherlands.
- 2000** Post Doctoral Researcher at National Research Council Canada, Institute for Research in Construction, Ottawa, Canada



- 1998 – 2000** Associate Professor, Faculty of Hydrotechnics, Hydraulic Structures Chair, Polytechnic University of Timisoara, Romania
- Sept, 1990 – 1997** Senior lecturer at Faculty of Hydrotechnics, “Politehnica” University, Timisoara, Romania
- Sept, 1989 – Aug, 1990** Hydraulic Engineering Designer, Institute for Research and Design in Hydraulic Engineering (ISPH), Timisoara, Romania – Seconded from Hidroconstructia S.A.
- Sept, 1987 – Aug, 1989** Hydraulic Engineer, ACH Bistra Poiana Marului, Caransebes, Romania

KEY QUALIFICATIONS

I have extensive experience in the areas of mathematical modelling and ICT. This foundation has led to my current research interest and expertise in the development and application of modelling systems for water related areas. Particularly I have experience in Hydroinformatics in the area of numerical methods (theory and application), decision support systems, river system modelling and use of water related tools for aquatic environment.

MAIN DISCIPLINE / SPECIALISATION

Physically based modelling, Flood modelling, River Systems modelling, Computational Hydraulics, Decision Support Systems, Hydroinformatics

EXPERIENCE (In Education and Projects at UNESCO-IHE)

- (a) **EDUCATION:** I have 24 years of teaching experience as well as completion of extensive pedagogical training from January 2011 to December 2011, which led to the University Teaching Qualification (UTQ) by Delft University of Technology (TU Delft). The experience gained in coordination, development of programmes, teaching and guiding Master of Science students is detailed below:

Coordination and Development of programs

- 2014 - Development of the "*Water resources modelling: Numerical models, methods, and applications*" course for Capacity Development of Higher Education on Integrated Water Resources Management at Chittagong University of Engineering & Technology, Bangladesh.
- 2013 - Development and coordination of the "*Introduction to river system modeling using Mike 11, with particular focus on floods*" course, for Department of Engineering Services, Ministry of Works and Human Settlement in Bhutan
- 2012-2014 - Development and coordination of a series of 8 courses on "*Hydrological and hydrodynamic modelling for Iraqi water professionals*", at special request of UNDP Iraq.
- 2010-2012 - Development of the Hydroinformatics specialisation as part of the Master of Science Programme in Technology Management & Integrated Modeling in Natural Resources, at AinShams University, Cairo, Egypt.



- 2010-2011 - Programme coordinator for Water Science and Engineering Master of Science Programme
- Since 2009 - Coordinator of the International Master in Hydroinformatics at Universidad del Valle, Cali Colombia
- 2005-2007 - Coordinating and development of a series of courses in "*Hydroinformatics theory and applications*" for water professionals in South Korea;
- 2004-2007 - Specialization coordinator for Hydroinformatics
- 2002-present - Module coordination for "*Modelling theory and Computational Hydraulics*"
- 2006-present - Module coordinator for "*River flood analysis and modelling*"
- 2006-present - Module coordinator for online course "*Flood modelling for management*"

Teaching

- Courses in regular Masters Programmes

- River systems modelling (since 2001)
- Free surface flow modelling (since 2001)
- Collaborative Engineering (2001-2005)
- Software engineering (2001-2008)
- Numerical Methods for Partial differential equations (since 2003)
- Water allocation modelling (since 2004)
- Methods and techniques for flood processes modeling (since 2006)
- 1D/2D modelling of floods (since 2007)
- Review of mathematics (since 2007)
- Decision Support Systems Applications (since 2007)
- Hydrodynamics and water quality of lakes and reservoirs (since 2008)

- Topics in various short, tailor-made and online courses

- Online courses:

- Methods and techniques for flood modelling (since 2005);
- Flood processes (since 2005);
- Decision Support Systems Applications (since 2005);
- Water allocation theory and special applications using RIBASIM (since 2005);



- Tailor-made (TM) and short courses (SC)
 - 2003 – “Knowledge mapping of water information” in SC course *Knowledge management* for ESCWA water professionals (in Cairo, Egypt);
 - 2005, 2006, 2007 – “Computational Hydraulics”, “Free surface modelling” and “Reservoir operation” in TM course *Hydroinformatics theory and applications* for water professionals from KWater, South Korea (8 weeks every year) (at UNESCO-IHE, Delft, The Netherlands);
 - 2005 – “Managing water information systems” in SC course *Knowledge management* for Chinese groundwater professionals (at UNESCO-IHE, Delft, The Netherlands);
 - 2006 – “Managing water information systems” in SC course *Knowledge management* for Iraqi water managers. (at UNESCO-IHE, Delft, The Netherlands);
 - 2007 – “River systems modelling” in TM course *Hydroinformatics for practitioners* (at ITAIPU Binacional Brazil / Paraguay)
 - 2011 - "Decision Support Systems" in TM course *Advanced training in modeling and information management applications for water, environmental management and climate change issues*. (Two phases May 2011 at UNESCO-IHE, Delft, The Netherlands and June 2011 in Ho Chi Minh City, Vietnam);
 - 2012 - "Hydrological and hydraulic modelling theory and applications using HEC-HMS and HEC-RAS modelling systems" within a series of eight UNDP tailor made courses for Iraqi water professionals. (in Istanbul, Turkey);
 - 2012 - "Reservoir simulation (using RESSIM) and decision support systems" within a series of eight UNDP tailor made courses for Iraqi water professionals. (in Istanbul, Turkey);
 - 2012 - "Catchment modelling using MikeSHE/Mike11" within a series of eight UNDP tailor made courses for Iraqi water professionals. (in Amman, Jordan);
 - 2013 - "Hydrological modelling of selected Iraqi catchments using HEC-HMS modelling system" within a series of eight UNDP tailor made courses for Iraqi water professionals. (in Istanbul, Turkey);
 - 2013 - "Catchment modelling using MikeSHE/Mike11" for a TM course for Bhutan water professionals. (Two phases: March 2013 at UNESCO-IHE, Delft, The Netherlands and May 2013 in Timphu City, Bhutan);



- 2013 - "Modelling large river systems" for TM course "Modelling tools and their use for decisions regarding flood adaptation" for Huaihe river Basin Commission (at UNESCO-IHE, Delft, The Netherlands);
- 2014 - "Hydraulic modelling of selected Iraqi catchments using HEC-RAS modelling system" within a series of eight UNDP tailor made courses for Iraqi water professionals. (in Istanbul, Turkey);
- 2014 - "Decision Support Systems as Tools for Water Management and Adaptation to Climate Change " within the TM course for Capacity Building of Vietnam's Centre of Water Management and Climate Change (at Centre of Water Management and Climate Change in Ho Chi Minh City, Vietnam);
- 2014 - "Flood inundation modelling" for SC *Using Open Source Software for GIS and Hydrological Modelling* (at UNESCO-IHE, Delft, The Netherlands)

MSc guidance

- 63 students guided for their MSc research work (36 by my self and 27 in co-supervision with colleagues);
- Covered topics for MSc are:
 - Flood modelling and inundation mapping;
 - Flood analysis;
 - Flood vulnerability;
 - Decision support systems for water systems;
 - Hydrodynamics and water quality of lakes and rivers;
 - Reservoir operation and management;
 - Dam break analysis
 - Hydropower assessment of large scale basins

(b) PROJECTS: I have 27 years of working experience, mainly in research, and capacity building projects related to applications of mathematical methods to problems of aquatic environment. Main projects where she has been involved as researcher, principal investigator and project leader are detailed bellow. All projects were obtained based on application to a call, and were awarded after fulfilling selection criteria for respective calls).

Main Research grants

- **ICeWater-** Improving water and energy efficiency in water distribution networks using novel sensor network technologies and simulation, optimisation and decision support components, EU FP7 funded project (<http://www.icewater-project.eu>); 2012-2015; Task: *researcher*; (UNESCO-IHE budget 400.000€)



- **ProACCII** - Post-graduate Research programme on Adaptation to Climate Change, with special focus on Mekong river basin; DUPC funded project (<http://proacc.unesco-ihe.org/about-proacc>); 2012-2014; Task: *researcher* (UNESCO-IHE budget 800.000 €)
- **ProACCI** - Post-Doctoral Research Programme on Adaptation to Climate Change (PRoACC) with Special Focus on the Mekong River Basin, DUPC funded project, (<http://proacc.unesco-ihe.org/about-proacc>); 2010-2012; Task: *researcher* (UNESCO-IHE budget 500.000 €)
- **LENVIS** - Localised environmental and health information services. Specific research on development of localised information services (water-related) for water quality on lakes and dissemination through web infrastructure accessible via mobile phone interfaces, EU FP7 funded project; 2008-2011; (www.lenvis.eu); *Task: researcher and project coordinator at UNESCO-IHE* (UNESCO-IHE budget 320.000 €)
- **EnviroGRIDS** - Building Capacity for a Black Sea Catchment Observation and Assessment System supporting Sustainable Development ; EU FP7 funded project (www.envirogrids.net); 2009-2013; Task: *researcher* (UNESCO-IHE budget 350.000 €)
- **TENCompetence** - Building European Network for Life long learning Competence development; EU FP7 funded project(<http://tencompetence-project.bolton.ac.uk/>); 2005-2009; Task: *researcher*, responsible with the implementation of the "Flood Modelling for management" pilot. (UNESCO-IHE budget 600.000 €)
- **FloodSITE** - Integrated flood risk analysis and management methodologies; EU FP7 funded project (www.floosite.net); 2004-2008; Task: *researcher*(UNESCO-IHE budget 370.000 €)
- **DSS-Romania** - DSS Flood for Romania: Feasibility study and market analysis of a Decision Support System; Partners for Water funded project; 2006-2007; Task: *project leader and researcher*(UNESCO-IHE budget 120.000 €)
- **DC-WFD** - Delft Cluster project on Water Framework Directive; Delft Cluster funded project; 2005-2008; Task: *researcher*(UNESCO-IHE budget 80.000 €)
- **I-learning**- PoWER I-learning module “Flood management for modelling”; 2003-2005; Task: *Project developer and content provider* (UNESCO-IHE budget 50.000 €)
- **SaltIntrusion**- Internal IHE Research funded project on Salinity intrusion in the Antwerp estuary; 2004-2005; Task: *researcher* (UNESCO-IHE budget 50.000 €)



- **WetWin** - Enhancing the role of Wetlands in integrated water resources management; EU FP7 funded project; 2010-2013; (www.wetwin.net), Task: *provide training in WEAP for the project partners*
- **DataNet** - Integrated Urban waste Water System Data Network; DUPC funded project; 2007; Task: *project leader and researcher*(UNESCO-IHE budget 25.000 €)
- **WQCauca** - Water Quality Modelling of the river Cauca in Colombia; 2004; ALBAN funded project; Task: *researcher*(UNESCO-IHE budget 25.000 €)
- **HydroplanEU** - An integrated approach for sewer water management; 2002-2005; EU FP5 funded project; Task: *researcher*(UNESCO-IHE budget 200.000 €)

Capacity building and educational projects

- **DANCERS** - Building Excellence in the Danube Region; EU FP7 funded project (<http://www.dancers-fp7.eu/>); 2013-2015; Task: *researcher*;
- **NICHE Vietnam** - Capacity Building of Centre of Vietnam's Centre of Water Management and Climate Change; The Netherlands Initiative for Capacity development in Higher Education (NICHE) funded project; 2012-2014; Task: *teaching material and providing training*;
- **TMT Bhutan** - Introduction to river system modelling for Bhutan professionals (using Mike 11) with particular focus on floods; Nuffic funded project; 2013; Task: *teaching material and providing training; project leader*(UNESCO-IHE budget 95.000 €)
- **TMT Egypt** - Upgrading of Training staff and Course management, with an emphasis on the Regular Training course on "Hydraulic Engineering In River Basins" and Related Capacities; Egypt; Nuffic funded project; 2012-2013; Task: *developing curricula and teaching material*(UNESCO-IHE budget 150.000 €)
- **Vietnam facility** - Advanced training in modeling and information management applications for water, environmental change management and climate change adaptation issues; 2009-2011; EVD funded project; Task: *developing curricula, teaching material and providing training*(UNESCO-IHE budget 35.000 €)
- **TMIM Egypt** - Technology Management & Integrated Modeling in Natural Resources: A University-Enterprise Win-Win Partnership; 2009-2012; EU TEMPUS funded project; Task: *project leader and curricula development* (UNESCO-IHE budget 95.000 €)



- **HHMI** - Hydraulic and Hydrological modeling for Iraqi professionals; 2012-2013, UNDP funded project; Task: project leader, providing training and assisting with model developments (UNESCO-IHE budget 150.000 €)
- **ETNET21** - European Thematic Network for Water and Environment Education and Research; 2001-2003; EU Leonardo funded project, Task: project leader and investigator (UNESCO-IHE budget 60.000 €)
- **ETNET21 Dissemination** - Dissemination of the findings of the ETNET21; 2004, EU Leonardo funded project, Task: project leader and investigator (UNESCO-IHE budget 20.000 €)
- **Kmap ESCWA** - Knowledge map for water resources in Arab countries; Project funded by ESCWA; 2003; Task: Content developer (UNESCO-IHE budget 40.000 €)
- **PKS** - Delft Cluster project Participant Knowledge Systems; 2001-2002; project financed by Delft Cluster; Task: researcher and facilitator of the process for both on-line and face to face interactions (UNESCO-IHE budget 50.000 €)
- **ISWH** - International Seminar in Water and Human (In)Security ; NWP funded project; 2002; Task: researcher and facilitator (UNESCO-IHE budget 40.000 €)
- **Hydro-resources** - On line resource for the Hydrology on-line courses; UNESCO funded project; 2001; Task: project leader and content development (UNESCO-IHE budget 15.000 €)

Other projects

- **Kmap** - Knowledge map for PoWER, DUPC PoWER funded project; 2003-2005; Task: project leader, investigator and content development (UNESCO-IHE budget 80.000 €)
- **DC KMap** - Knowledge map for tunneling area within Delft Cluster; Delft Cluster funded project; 2001-2004; Task: project leader, investigator and content development (UNESCO-IHE budget 45.000 €)

PhD Guidance (Research as a PhD supervisor)

Remark: For each PhD student the country of origin is mentioned in order to show the relevance of their work to their own country. The PhD study was conducted at UNESCO-IHE in collaboration with TU Delft or Wageningen University, who are also issuing the PhD diploma.

1. J. Nham Chung (South Korea), Thesis: *Eco-hydraulic modelling of eutrophication for reservoir management*. (Defended in 2011 at TU Delft)



2. A. Azab (Egypt), Thesis: *Development of a framework for decision support system for Edko lake in Egypt by integrating GIS techniques and numerical models*. (Defended in 2012 at TU Delft)
3. L. Shengyang (China), Thesis: *Optimisation of reservoir operation, for flood defence on the lower Yellow River*. (Defended in 2013 at TU Delft)
4. A. Almoradie (Philippines), Thesis: *Network Distributed Support System for Collaborative Citizens' and Stakeholders Participation in Management of Water and Environmental Resources*. (Defended in 2014 at TU Delft) - in co-supervision
5. C. Wang (China), Thesis: *Numerical Modelling of Ice Floods in the Ning-Meng reach of the Yellow River basin*. (Scheduled defence 2015 at TU Delft)
6. M. Castro (Colombia), Thesis: *Model based simulation and optimization of water distribution networks for energy consumption and water losses reduction - in co-supervision*. (Started October 2012 - Scheduled defence: 2016, at TU Delft)
7. Z. Mousa (Nigeria), Thesis: *Living with sea level rise on a subsiding delta: combining impact assessments to develop mitigation and adaptation options for the Niger delta*. (Started May 2013 - Scheduled defence 2016, at TU Delft)
8. A. Abdullah (Iraq), Thesis: *Salinity changes in a tidal river for water management improvement in the Shatt al-Arab river, Iraq* – in co-supervision (Started March 2013 - Scheduled defence: 2016, at TU Delft)
9. Q. Pan (China), Thesis: *Multi-stakeholder Decision Support Framework for Optimized Water Quality Assessment and Management of big water bodies with exemplification on the Taihu lake in China* (Started January 2014 - Scheduled defence: 2018 at TU Delft)
10. J. Akter (Bangladesh), Thesis: *Decade to century-scale geo-morphological development of the Bangladesh delta*. (Started February 2014 - Scheduled defence: 2018 - at Wageningen University)

OTHER ACADEMIC HIGHLIGHTS

Publications

- Over the past five years, I have been author or co-author of around 6 papers per year on peer reviewed journal in subject areas of: Environmental Science, Earth and Planetary Sciences, Flood hazards, Decision Support Systems, reservoir optimization, Hydroinformatics
- Publications: 3 books, two chapters in books, more than 40 articles in peer reviewed journals, more than 50 conference papers. (For a list of publication, please see List of Publications)



- H-index = 15 (Google Scholar); 13 (Scopus); 10 (ISI web of Knowledge)
- Associate Editor of Journal of River Basin Management (<http://www.jrbm.net/>) and Editor of IWA Publishing Water Wiki (<http://www.iwawaterwiki.org/>)
- Guest Editor of the Special Issue on "Lenvis symposium on localized environmental services for all" in Environmental Engineering and Management Journal, Volume 11, Issue 5 (May 2012);
- Guest Editor of the Special Issue on "Environmental Research and technology-Ecoimpulse 2012 International Conference" in Environmental Engineering and Management Journal, Volume 12, Issue 5 (May 2013);
- Guest Editor of the Special Issue on "IAHR 2013 Eco-hydraulics" in Journal of Hydro-environment Research (In Press)
- Frequent Reviewer for many international scientific journals (around 15 reviews per year), such as Water Resources Research, Journal of Hydrology, Geophysical Research Letters, Hydrological Sciences, Journal of Hydroinformatics, Water Resources Management, Environmental Modelling and Software, Journal of Flood risk management, Journal of Hydraulic Research, Geophysical Letters, Journal of remote Sensing

Organisations of Conferences and Workshops

- Co-organiser of the International workshop on Planning and design of Observatories Obermann centre (Amana, US, August, 2007);
- Convener at the 33IAHR Congress of the session "Education, History, Social/Economic Impacts" (Vancouver, Canada, 9-14 August, 2009);
- Co-Convener at the British Hydrological Society Third International Symposium "Role of Hydrology in Managing Consequences of a Changing Global Environment" for the session: "Integrating Catchment Science" (New Castle, UK, 19-23 July, 2010);
- Convener at the 34IAHR Congress of the session "Education and Life long learning in Hydraulic Engineering" (Brisbane, Australia, 26 June-01 July, 2011);
- Co-organiser of Open Water Symposium (Delft, The Netherlands, April, 2012)
- Organiser of LENVIS - Localised ENVironmental Information Systems symposium (Delft, The Netherlands, April, 2012);
- Co-organizer of the Workshop on Decision Support Systems BALWOIS conference (Ohrid, Macedonia, June, 2012);

Committee members

- Member of the scientific organizing committee of the 10-th Hydroinformatics International Conference (Hamburg, Germany, 2012)
- Member of the scientific organizing committee of 2nd International Conference Water Across Time in Engineering Research - WATER 2012 (Constanta, Romania, 2012)



- Member of the scientific organizing committee of the 35IAHR Congress (Chengdu, China, 2013) and 36IAHR Congress (The Hague, The Netherlands);
- Member of the scientific organizing committee of the River Flow 2012 (san Jose, Costa Rica) and River Flow 2016 (St. Luis, USA, 2016)

Invited speaker

Invited seminars and keynotes at major universities and research centers in France, Italy, Portugal, Egypt, Romania, Macedonia, China, South Korea, USA, Colombia, Brazil, Germany. A selection of these keynotes is listed below:

- HydroEurope at Sophia Antipolis University, Nice, France, on March 2003, 2004 and 2005;
- CINARA, Universidad del Valle, Cali, Colombia, April 2003;
- Faculty of Hydrotechnics, Timisoara, Romania, May 2007;
- Kwater, Dajeon, South Korea, November 2007;
- Keynote speaker at Agua 2007, 2007, Cali, Colombia on “How to make use of knowledge from data rich areas to solve water supply problems in data scarce areas”
- Keynote speaker at Agua 2011, 2011 Cali, Colombia on “Modeling floods and droughts in a changing climate”
- Invited speaker on “Hydroinformatics and the use of Technology for Facilitating Sharing of Environmental Services”, at Department of Computer Science, Bicocca University, (Milan, Italy, 2011)
- Invited speaker for a visiting group of specialists of Yellow River Commission, China, about “Romanian approach to flood management along the Danube” Bucharest, Romania, 2011;
- Keynote speaker at Ecoimpulse 2012 conference, Timisoara, Romania on “Modelling floods in climate change conditions”
- Keynote speaker at Water2012 conference, on “Hydroinformatics tools for modeling floods and droughts in climate change conditions” (on October 2012, via Distance Connection)

Awards

Obermann award of the Obermann Centre (Iowa, US) for setting up the principles of Observatories for large river systems with special applications to Mississippi river.



PROFESSIONAL AFFILIATIONS

Member of
Romanian Association of Civil Engineers
International Association of Hydro-Environment Researchers (IAHR)
SENSE Research School
European geosciences Union (EGU)

LANGUAGE PROFICIENCY

<i>Language</i>	<i>Reading</i>	<i>Speaking</i>	<i>Writing</i>
Romanian	Mother tongue	Mother tongue	Mother tongue
English	Excellent	Very Good	Very Good
French	Excellent	Very Good	Good
Dutch	Good	Moderate	Fair

03 October 2014