

PERSONAL INFORMATION

Dr. Arun Rana (Ph.D.)



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Sex Male | Date of birth 08/08/1986 | Nationality Indian
 Permanent Resident - Sweden

WORK EXPERIENCE

October 2015 - Present

Scientist
 SMHI, Norrköping, Sweden

- Bias Correction
- Climate Change Impact Assessment
- Multi-modelling
- Extreme event analysis/Mapping
- Remote Sensing/ Spatial Analysis

December 2013- July 2015

Research Associate
 Portland State University, Portland, OR, USA

- Statistical Bias Correction
- Climate Change Impact Assessment
- Multi-modelling
- Extreme event analysis/Mapping
- Remote Sensing/ Spatial Analysis

May 2013-September 2013

Research Assistant
 Thomson Reuters, Point Carbon, Hydrology Division, Sweden

- Develop a hydrological power forecasting model

September 2011- December 2011

Research Assistant/Intern
 DHI, Copenhagen, Denmark

- Develop a flood Inundation model for Mumbai
- Flood Modelling

January 2009-July-2009

Research Assistant
 WindForce Management Services Pvt. Ltd., Gurgaon Haryana, India

- Develop a wind power scenario maps for India
- Worked on various wind power assessment projects across various states of India

June 2008-July 2008

Research Assistant/Intern
 WaterAid India, Vasant Kunj, Delhi, India

- Micro planning for drinking water and waste water resources in several panchayats of Madhya Pradesh, India

EDUCATION AND

TRAINING

September 2009-September
2013

PhD Water Resources Engineering

Pass

Lund University, LTH, Department of Water Resources Engineering, Lund, Sweden

- Climate change Impacts
- Extreme Event analysis
- Flood Modelling
- Management of Water Resources

August 2007- July 2009

M.Sc. Water Resources Management

7.70/10 CGPA

TERI University, Department of Natural Resources, Vasant Kunj, Delhi, India

- Water and Wastewater treatment
- Climate Change
- Ecology/GIS for Water resource management
- Statistical Techniques
- Pollution modelling

September 2009-September
2013

B.Sc.(Hons.) Botany

70.4%

Kirori Mal College, Delhi University, Delhi, India

- Botany
- Zoology
- Chemistry

PERSONAL SKILLS

Mother tongue(s)

Hindi

Other language(s)

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
Excellent	Excellent	Excellent	Excellent	Excellent

Organisational / managerial
skills

- Supervision/Project Management
- Co-supervised 2 PhD Students at Portland State University
- Supervised 2 Master Students at Portland State University
- Supervised 2 master thesis and various courses in Lund University

Computer skills

- Proficient user of various computer languages and modelling platforms such as:
- Microsoft Office™ tools
 - Linux/Unix
 - Matlab
 - R
 - ArcGIS
 - Grads
 - IDL

Other skills/Hobbies

- Painting, Reading and Cricket

Driving licence

Transport Department Government of Delhi, India
License Number: DL-0420050112677ADDITIONAL
INFORMATION

- Publications**
- Rana, A., Moradkhani, H., and Qin, Y. (2016) Understanding the Joint Behavior of Temperature and Precipitation for Climate Change Impact Studies, *Theoretical and Applied Climatology*. DOI: 10.1007/s00704-016-1774-1
 - Ahmadalipour, A., Rana, A. and Moradkhani, H. (2015) Multi-criteria evaluation of CMIP5 GCMs for climate change impact analysis. *Theoretical & Applied Climatology*. DOI: 10.1007/s00704-015-1695-4
 - Rana, A. and Moradkhani, H. (2015) Spatial, temporal and frequency based climate change assessment in Columbia River Basin using multi downscaled-Scenarios, *Climate Dynamics*. DOI: 10,1007/s00382-015-2857-x
 - Rana, A., Foster, K., Bosshard, T., Olsson, J. and Bengtsson, L. (2014) Impact of Climate change on rainfall over Mumbai using Distribution Based Scaling of Global Climate Model Projections. *Journal of Hydrology: Regional Studies*, Available online 2 August 2014, ISSN 2214-5818, DOI: 10.1016/j.ejrh.2014.06.005
 - Parth Sarthi, P., Agrawal, A. and Rana, A. (2014) Possible future changes in cyclonic storms in the Bay of Bengal, India under warmer climate. *Int. J. Climatol.* doi: 10.1002/joc.4053.
 - Rana, A., Bengtsson, L., Olsson, J. and Jothiprakash, V. (2013) Development of IDF-Curves for Tropical India by Random Cascade Modeling. *Hydrol. Earth Syst. Sci. Discuss.*, 10, 4709–4738, doi:10.5194/hessd-10-4709-2013
 - Bengtsson, L. and Rana, A. (2013) Long-term change of daily and multi-daily precipitation in southern Sweden. *Hydrological Processes*. DOI: 10.1002/hyp.9774
 - Rana, A. Madan, S. and Bengtsson, L. (2012) Performance Evaluation of Regional Climate Models (RCMs) in determining precipitation characteristics for Göteborg, Sweden. *Hydrology Research*. doi:10.2166/nh.2013.160
 - Rana, A., Uvo, C. Bengtsson, L. and Sarthi P.P. (2012) Trend analysis of rainfall for Delhi and Mumbai, India. *Climate Dynamics* 38 (1):45-56.doi:10.1007/s00382-011-1083-4.
 - Singh, W. and Rana, A. (2012) Mapping and situation analysis of drinking water resources in India – A participatory approach. *Vatten- Journal of water management and research*, 68: 75-83.
 - Filipova, V., Rana, A. and Singh, P. (2012) Urban Flooding in Gothenburg – A MIKE 21 Study. *Vatten- Journal of water management and research*, 68: 175-184.
 - Rana, A. (2011) Avoiding natural disaster in megacities – Case study for Urban Drainage of Mumbai. *Vatten* 67:55–59.
- Teaching**
- Climate Science and Policy Course 2016, Linköping University
 - Climate Course 2016, Uppsala University

Projects/Thesis

- Micro-planning for Drinking Water and Wastewater Management in three panchayats of Guna District, M.P, India, Minor Project Report, TERI University, India, 2008
- Wind Resource Assessment and Power Production Analysis in India, Master Thesis, TERI University, India, 2009
- Direct and indirect impacts of pollutants on the water quality of river Ganges and Yamuna at Allahabad during the Ardh- kumbh mela in 2007 and its impact on water standards as permitted by central and state pollution control boards, 2008, TERI University, New Delhi, India
- Wetland system for control of water pollution and it's application in wastewater treatment in tsunami affected areas of Thailand, 2008, TERI University, New Delhi, India
- Marine pollution: A study paper aimed to trace the international and national laws, policies and agreements relating to sea or marine water pollution, 2008, TERI University, New Delhi, India
- Participatory resource mapping and its integration in GIS, 2009, TERI University, New Delhi, India
- Flood Protection and mitigation measures, 2009, Advanced Hydrology Course, Lund University, Lund, Sweden
- WEAP analysis of Volta river basin in Ghana, 2009, Integrated water resources management course, Lund University, Lund, Sweden
- Groundwater modelling with Python, 2010, Programming course, Lund University, Lund, Sweden
- Investigation of trends of high precipitation in Delhi and Mumbai, 2010, Multivariate statistics course, Lund University, Lund, Sweden
- Computational Mathematics with Python: 2D Numerical Groundwater flow modelling, 2010, Computational Mathematics Course, Lund University, Lund, Sweden
- Prospective of students and teachers on Web based and classroom based courses, 2010, Introduction to teaching and learning in higher education course, Lund University, Lund, Sweden

Conferences/Seminars

- Kjellstrom, E., Rana, A., Grigory, N., Renate, W., Hansson, U., Kolax, M. (2016) Evaluation of climatic changes in South-Asia, EGU General Assembly 2016, 04/2016, Vienna, Austria
- Rana, A., Moradkhani, H. (2016) Multi objective climate change impact assessment using multi downscaled climatic scenarios, EGU General Assembly 2016, 04/2016, Vienna, Austria
- Zarekarizi, M., Rana, A., Moradkhani, H. (2016) Precipitation extremes and their relation to climatic indices in the Pacific Northwest, USA, EGU General Assembly 2016, 04/2016, Vienna, Austria
- Ahmadalipour, A., Rana, A. and Moradkhani, H. (2014) Assessment of Climate Projections Using Ensembles of CMIP5 GCMs and Developing a Probable Future Scenario for Evaluation of Possible Future Changes, AGU 2014 Fall Meeting; 12/2014, San Francisco, CA
- Rana, A., Ahmadalipour, A., Qin, Y. and Moradkhani, H. (2014) Modelling uncertainties and possible future trends of precipitation and temperature for 10 sub-basins in Columbia River Basin (CRB) , AGU 2014 Fall Meeting; 12/2014, San Francisco, CA
- Qin, Y., Rana, A., and Moradkhani, H. (2014) Climate Change Impact Assessment in Pacific North-West Using Copula based Coupling of Temperature and Precipitation variables., AGU 2014 Fall Meeting; 12/2014, San Francisco, CA
- Ahmadalipour, A., Rana, A. and Moradkhani, H. (2014) Statistical Multi-Criteria Analysis of CMIP5 GCMs for Impact Analysis in Columbia River Basin, 5th Annual Pacific Northwest Climate Science Conference, Seattle, Washington; 09/2014
- Demirel, M., Rana, A. and Moradkhani, H. (2014) The effect of multi-model averaging of climate model outputs on the seasonality of rainfall over the Columbia River Basin, 5th Annual Pacific Northwest Climate Science Conference, Seattle, Washington; 09/2014
- Rana, A., Qin, Y., and Moradkhani, H. (2014) Climate change Impact Assessment in Columbia River Basin using multi downscaled-Scenario Analysis, 5th Annual Pacific Northwest Climate Science Conference, Seattle, Washington; 09/2014
- Rana, A., Henonin, J., Bengtsson, L., and Mark, O. (2013) An Integrated modeling approach - Urban flooding inundation in Mumbai, CORFU, International Conference on Flood Resilience: Experiences in Asia and Europe, 5-7 September 2013, Exeter, United Kingdom
- Sörensen, J. and Rana, A. (2013) Comparative analysis of flooding in Gothenburg, Sweden and Mumbai, India: A review, CORFU, International Conference on Flood Resilience: Experiences in Asia and Europe, 5-7 September 2013, Exeter, United Kingdom
- Rana, A. Madan, S. and Bengtsson, L. (2012) On Climate Prediction: Performance Evaluation of Regional Climate Models (RCMs). Proc. XXVII Nordic Hydrological Conference, Aug 2012, Oulu, Finland
- Rana, A., Bengtsson, L., Jyothiprakash, and Singh, W. (2010) Rainfall and climatic scenarios for design of drainage system. Proc. XXVI Nordic Hydrological Conference, Aug 2010, Riga, Latvia
- Rana, A. and Sinha, V. (2009) Wind Energy Estimation using Geoinformatics and SDSS for Feasibility Study. International Digital Governance and Hotspot Geoinformatics conference, June 1-3, 2009, TERI University, Delhi, India

Scholarships/Honours and awards

- Received a certificate from honorable president of India, Dr. Shankar Dayal Sharma for scouts and guides, 1996, New Delhi, India
- Erasmus-Mundus scholarship from European Union for pursuing PhD in Lund University, Sweden
- Scholarship Award from Ångpanneföreningens Forskningsstiftelse Foundation
- Scholarship Award from Nils Hörjels (Stiftelsen Landshövding Nils HörjelsForskningsfond vid Lunds Tekniska Högskola)
- Scholarship award from Stiftelsen Margit Stiernswärds fond för miljövårdsforskning
- Scholarship award from Stiftelsen Lars Hiertas Minne
- Scholarship award from European Science Foundation

- Memberships**
- AGU (American Geophysical Union)
 - EGU (European Geophysical Union)
 - Member of Doctoral student section at TLTH student union, Lund University, Sweden from September 2009- February 2011
- Professional Training/Courses**
- IPR's and trade related issues in Agricultural Biotechnology- Undergone a 15 days short term course on IPR's and trade related aspects of it in agricultural biotechnology held at TERI University during 4-18 January 2008, India
 - Undergone week long training for ArcGIS Software from ESRI, 2009, TERI University, New Delhi, India
 - Attended week long course in Regional climate modeling and its use for impact research held at Danish Metreological Institute (DMI) during 9-13 May 2011
 - Attended week long course in Earth System Modelling in association with Lund University, Goteborg University and Chalmers University, Sweden during 26September-12October 2011
 - Attended a month long course in Introduction to sustainable development given by Sendzimir Foundation, Poland (Online) during 10 March-10 April 2012
 - Attended a month long course in Applications of sustainable development given by Sendzimir Foundation, Poland (Online) during 10 April-10 May 2012
 - Attended a week long course in Viable Water Management and Governance for Futures given in Cooperation between Tampere University of Technology; Technical University of Denmark; University of Tampere; University of Iceland; University of Bergen, Lund University; University of Latvia; Kaunas University of Technology during 25-29 June 2012
- References**
- Dr. Hamid Moradkhani
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Phone:+1 (503) 725-2436
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 - Dr. Lars Bengtsson, PhD (Sweden)
Associate Professor, Department of Water Resources Engineering
Lund University, Box No 118, Lund, Sweden
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E-mail: Lars.Bengtsson @ tvrl.lth.se
 - Dr. Ronny Berndtsson, PhD (Sweden)
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 - Dr. Arun Kansal, Phd (IIT Delhi)
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ANNEXES

- Cover Letter