**Mahesh Prakash**

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**PROFILE**

Dr Mahesh Prakash is a Senior Principal Research Scientist at CSIRO Data61 and leads a group of 40 Scientists, Engineers and Software Professionals who develop and apply Computational Models for various Geophysical and Industrial Systems. He has more than fifteen years of experience in developing and applying computational models to extreme event flows including inundation related to tsunamis, storm surge and sea level rise related events and catchment flooding. He has done this in the context of early warning systems development, climate adaptation, risk assessment and mitigation. Dr Prakash has formal training in project management and has overseen large projects in Disaster Risk Management in Australia and China related to floods and bushfires and with a significant climate adaptation and mitigation context especially for urban and peri-urban regions.

**EDUCATION**

* PhD (Civil Engineering, Fluid Mechanics), Victoria University, Melbourne, Australia, 2000.
* Bachelors of Engineering with Honours (Chemical Engineering) Institute of Chemical Technology (formerly University Department of Chemical Technology), Mumbai, India, 1997.
* PRINCE2 Agile project manager

**LANGUAGE PROFECIENCY**

* English – Fluent in speaking, reading and writing
* Hindi – Fluent in speaking, reading and writing
* Tamil – Fluent in speaking

**PROFESSIONAL EXPERIENCE**

Commonwealth Scientific and Industrial Research Organization (CSIRO), DATA61

*Senior Principal Research Scientist and Group Leader*

Research areas have included:

* Development and application of computer models for simulating geophysical and natural hazards including storm surges, flash floods, bushfires, tsunamis and landslides.
* Manage the integration of a wide variety of computational models including downscaled atmospheric models for disaster management and mitigation applications.
* Incorporation of climate change analytics into future flood/fire impact scenario modeling.
* Development and application of capabilities allowing efficient use of earth observation data (including satellite and aerial/ground based LiDAR) in disaster management applications.
* Contribution to applying statistical methods to encompass deterministic modeling such that these models are able to be applied in a risk context to disaster scenarios.
* Application of earth observation informatics (EOI) capabilities available within CSIRO and elsewhere with the aim of applying these for Geophysical and Natural Hazards Modelling.

**RECENT AWARDS & RECOGNITIONS**

2016 Invited Speaker, CSIRO-Chinese Academy of Sciences joint workshop on climate extremes and disasters, Melbourne, Australia

2015 Invited Speaker, CSIRO-Chinese Academy of Sciences joint workshop on climate extremes and disasters, Beijing, China

2015 First Prize at the iAwards in the Sustainability Category in Victoria, Australia for the development of the sustainability too, MyClimate for the City of Port Phillip, Victoria

2014 Invited Keynote, 2nd Saudi International Environmental Technologies Conference, KACST, Saudi Arabia

2014 Resilient Australia commendation award for developing a shallow water integrated flood tool for the City of Port Phillip that is able to evaluate combined coastal and catchment flooding.

**RECENT RELATED EXTERNALLY FUNDED PROJECTS (AS PROJECT LEADER)**

***Project 1***

Company and Address:

AusAID (ACEDP) administered through GHD

C11, 12/F, Tower 2, Xihuan Plaza, No. 1, Xiwai Avenue

Xicheng District, Beijing 100044, China

Project locations:

CSIRO, Private Bag 33, Clayton South, VIC 3169, Australia and

SASMAC, 28, Lianhuachixi Road, Haidian Dist., Beijing 100830, China

Name and telephone number of principal contact:

Chaofeng (Douglas) Wu, Mobile 0430792025

Description: Simulated and analysed several flood inundation scenarios caused by dam breaks due to failure of concrete gravity and earth dams. Predicted flow velocities, water depths, maximum discharge rates and arrival times for locations of key interested for the scenarios that were analysed. Created prototype software that would simulate flood inundation in 3D in a GIS based environment.

Project value: AUD 1.05 million

Project period: January 2010 – April 2012

***Project 2***

Company and Address: GreenCross Australia

PO Box 12117

George Street, Brisbane

QLD 4003

Australia

Project location: CSIRO, Private Bag 33, Clayton South, VIC 3169, Australia

Name and telephone number of principal contact:

Lisa Wilhelmseder

Head of Programs

Work: 07 3003 0644, Mobile: 0403 944 565.

Description: Simulated, analysed and visualized storm surge scenarios for Townsville City, Queensland including rainfall and catchment flooding.

Project value: AUD 120,000

Project period: June 2012 – November 2012

***Project 3***

Company and Address:

City of Port Phillip

99A Carlisle Street, St Kilda, VIC 3182, Australia

Project location:

CSIRO, Private Bag 10, Clayton South, VIC 3169, Australia

Name and telephone number of principal contact:

Renae Walton, Senior Project Manager, Climate Adaptation and Sustainability

Phone: 03 9209 6607, email: rjwalton@portphillip.vic.gov.au

Description: Developed a methodology to include adaptation solutions into flood modelling and compared “Before” and “After” adaptation scenarios for the cases investigated using scientific visualisation techniques. Developed a prototype City Based Flood Adaptation Solutions Tool (C-FAST) which won a Resilient Australia Commendation Award from the Attorney General’s Department.

Project value: AUD 130,000

Project period: May 2013 – October 2014 (project was completed in two phases during this period)

***Project 4***

Company and Address:

City of Bunbury

4 Stephen Street, Bunbury WA 6230, Australia

Project location:

CSIRO, Private Bag 10, Clayton South, VIC 3169, Australia

Name and telephone number of principal contact:

Bec Pianta, Grants Manager, SEMC

Phone: +618 9482 1706, email: bec.pianta@semc.wa.gov.au

Description: Development of an integrated approach to flood and stormwater management strategies for the City of Bunbury including planning and emergency management considerations. This project utilises the modelling, analytics and visualisation capabilities of the C-FAST prototype.

Project value: AUD 340,000

Project period: April 2015 to March 2017

***Project 5***

Company and Address:

City of Geelong

Project location:

CSIRO, Private Bag 10, Clayton South, VIC 3169, Australia

Name and telephone number of principal contact:

Leigh Dennis, Coastal Adaptation Program Manager, City of Geelong, Victoria

Phone: +613 52724134, email: ldennis@geeloncity.vic.gov.au

Description: Develop a community consultation and visualization capability to deliver potential outcomes of climate adaptation for seven hotspot locations in the City of Geelong. Utilises the C-FAST modelling capabilities for these outputs.

Project value: AUD 340,000

Project period: April 2015 to September 2016

***Project 6***

Company and Address:

Emergency Management Victoria

Project location:

CSIRO, Private Bag 10, Clayton South, VIC 3169, Australia

Name and telephone number of principal contact:

Lew Short, Acting Director Risk and Resilience

Phone: 03 8685 1342, email: Lew.Short@emv.vic.gov.au

Description: Develop an integrated evacuation modelling capability for managing fire related evacuation in the Otway National Park region in Victoria with an ability for it to be scaled up state and nationwide.

Project value: AUD 653,000

Project period: March 2016 to September 2017 (the project is in progress)

**RECENT RELEVANT PUBLICATIONS**

1. Linking data, modelling and visualisation with adaptation pathway concepts – exploration through case studies in Port Phillip Bay, Victoria By: Mahesh Prakash, James Hilton, Raymond Cohen, Michael Nolan and Lalitha Ramachandran, Coast to Coast Conference 2016, Melbourne Australia
2. Data Fusion Issues and Solutions for Urban Flood Modelling, By: Raymond Cohen, Mahesh Prakash, James Hilton and Fletcher Woolard, Coast to Coast Conference 2016, Melbourne, Australia.
3. Assessing sea level rise risks to coastal floodplains in the Kakadu Region, Northern Australia, using a tidally-driven hydrodynamic model By: Peter Bayliss, Kate Saunders, Leo Dutra, Lizandra Melo, James Hilton, Mahesh Prakash and Fletcher Woolard. Accepted for publication in Journal of Marine and Fresh Water Research, <http://dx.doi.org/10.1071/MF16049>, 2016
4. A scenario-based risk framework for determining consequences of different failure modes of earth dams By: Cleary, Paul W.; Prakash, Mahesh; Mead, Stuart; et al. NATURAL HAZARDS Volume: 75 Issue: 2 Pages: 1489-1530, 2015
5. Integrating Hydrodynamic and Hydraulic Modeling for Evaluating Future Flood Mitigation in Urban Environments, By: M Prakash, J Hilton, L Ramachandran Environmental Software Systems. Infrastructures, Services and Applications, 2015
6. An Integrated Workflow Architecture for Natural Hazards, Analytics and Decision Support, By: J Hilton, C Miller, M Bolger, L Hetherton, M Prakash Environmental Software Systems. Infrastructures, Services and Applications, 2015

**Lifetime citation summary report**

**ISI**

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| **Publications:** | **42** |
| **spacer** |
| **Sum of the Times Cited :** | **545** |
| **spacer** |
| **Average Citations per Item  :** | **13.29** |
| **spacer** |
| **h-index  :** | **12** |

**Google Scholar**

**Publications: 99**

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| **Citation indices** | All | Since 2011 |
| Citations | 1238 | 753 |
| h-index | 17 | 14 |
| i10-index | 30 | 18 |