

# Gaurav Mitra

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CONTACT INFORMATION	13905 University Blvd, Sugar Land, Texas - 77479, USA	e-mail: gaurav@ti.com web: <a href="http://gmtra.github.io/">http://gmtra.github.io/</a>
TERTIARY EDUCATION	<b>Australian National University</b> , Canberra, ACT, Australia <i>Doctor of Philosophy - High Performance Computing</i> • Panel: Prof. Alistair Rendell and Dr. Eric McCreath (ANU) <i>Bachelor of Software Engineering(Hons.)/Bachelor of Science</i> • Degree Average: <b>77% (Distinction)</b> over 42 courses • Honours Grade: <b>Second Class, Division A</b> • Majors: Software Engineering, Mathematics, Computational Modeling	<b>Feb 2011 – Nov 2017</b> <b>Feb 2006 – Dec 2010</b>
EMPLOYMENT EXPERIENCE (INDUSTRY)	<b>Texas Instruments Inc.</b> , Houston, TX, USA <i>Software Engineer</i> Multicore compiler and runtime tools development for TI ARM/DSP SoCs with a focus on OpenCL. <b>National Computational Infrastructure</b> , Canberra, ACT, Australia <i>Staff Scientist</i> Research, implementation, and support of scientific application codes for the Raijin Supercomputer. <b>nCore HPC LLC.</b> , Petaluma, CA, USA <i>Systems Software Engineer</i> Software tools development, porting and optimization of scientific & numerical application codes in C/C++ for the nCore BrownDwarf ARM/DSP supercomputer. <b>Texas Instruments Inc.</b> , Houston, TX, USA <i>Software Engineer Intern</i> Implemented the OpenMP 4.0 Accelerator Model runtime and meta-compiler and ported scientific and numerical application codes in C/C++ for the TI Keystone II ARM/DSP System-on-chip. <b>National ICT Australia</b> , Canberra, ACT, Australia <i>Software Engineer</i> C/C++ software development for ARM embedded systems in the InterfereX project at NICTA CRL. <b>CSIRO ICT Center</b> , Canberra, ACT, Australia <i>Summer Intern</i> Implemented a Semantic Web search engine in Java while working within the Web Services Division.	<b>Nov 2017 – Present</b> <b>Aug 2016 – Oct 2017</b> <b>Jul 2013 – Oct 2013, Nov 2015 – Jul 2016</b> <b>Nov 2013 – July 2014</b> <b>Aug 2009 – May 2010</b> <b>Nov 2008 – Feb 2009</b>
EMPLOYMENT EXPERIENCE (ACADEMIA)	<b>Australian National University</b> , Canberra, ACT, Australia <i>Lecturer</i> • COMP 2100/6442 Software Construction • COMP 2300/6300 Introduction to Computer Systems <i>Guest Lecturer</i> • COMP 3320/6464 High Performance Scientific Computing • COMP 3300/6330 Operating Systems Implementation <i>Lecturer - Intensive Course</i> • Delivered Workshops on Shared Memory Parallel Programming for Engineers • 3-Day Workshop: Canon Research (CISRA), Sydney • 5-Day Workshop: Australian Signals Directorate, Canberra <i>Tutor/Teaching Assistant</i> • COMP 4300/8300 Parallel Systems • COMP 2100/6442 Software Construction • COMP 3300/6330 Operating Systems Implementation • ENGN 2225 Systems Engineering Design • COMP 1100 Introduction to Programming and Algorithms • COMP 2310/6310 Concurrent & Distributed Systems • COMP 1100 Introduction to Programming and Algorithms • COMP 2310/6310 Concurrent & Distributed Systems	<b>Feb 2016 – Jun 2016</b> <b>Feb 2016 – Jun 2016</b> <b>Apr 2016</b> <b>Oct 2014</b> <b>Sep 2015, Feb 2016</b> <b>Jun 2016</b> <b>Feb 2015 – Jun 2015</b> <b>Feb 2015 – Jun 2015</b> <b>Jul 2014 – Nov 2014</b> <b>Feb 2013 – Jun 2013</b> <b>Feb 2011 – Jun 2011</b> <b>Jul 2010 – Nov 2010</b> <b>Feb 2010 – Jun 2010</b> <b>Jul 2009 – Nov 2009</b>

## PUBLICATIONS

- **Gaurav Mitra**, Jonathan Bohmann, Ian Lintault, Alistair P. Rendell. *Development and Application of a Hybrid Programming Environment on an ARM/DSP System for High Performance Computing*, The 32nd IEEE International Parallel and Distributed Processing Symposium, IPDPS 2018
- **Gaurav Mitra**, Andrew Haigh, Anish Varghese, Luke Angove, Alistair P. Rendell. *Split Wisely: When work partitioning is energy-optimal on heterogeneous hardware*, The 18th IEEE International Conference on High Performance Computing and Communications, HPCC 2016
- Kristopher Keipert, **Gaurav Mitra**, Vaibhav Sunriyal, Sarom S. Leang, Masha Sosonkina, Alistair P. Rendell, Mark S. Gordon. *Energy-efficient computational chemistry: Comparison of x86 and ARM systems*, JCTC 2015.
- Anish Varghese, Robert Edwards, **Gaurav Mitra** and Alistair P. Rendell. *Programming the Adapteva Epiphany 64-core Network-on-chip Co-processor*, IJHPCA 2015
- **Gaurav Mitra**, Eric Stotzer, Ajay Jayaraj, Alistair P. Rendell. *Implementation and Optimization of the OpenMP Accelerator Model for the TI Keystone II Architecture*, IWOMP 2014.
- Anish Varghese, Robert Edwards, **Gaurav Mitra** and Alistair P. Rendell. *Programming the Adapteva Epiphany 64-core Network-on-chip Co-processor*, ASHES Workshop, IPDPS 2014
- Eric Stotzer, Ajay Jayaraj, Murtaza Ali, Arnon Friedmann, **Gaurav Mitra**, Alistair P. Rendell, Ian Lintault. *OpenMP on Low-Power TI Keystone II ARM/DSP System-on-chip*, IWOMP 2013.
- **Gaurav Mitra**, Beau Johnston, Alistair P. Rendell, Eric McCreath, Jun Zhou. *Use of SIMD Vector Operations to Accelerate Application Code Performance on Low-Powered ARM and Intel Platforms*, ASHES Workshop, IPDPS 2013.
- **Gaurav Mitra**, Xuan Zhou, Athman Bouguettaya and Xumin Liu. *A Request Oriented Model for Web Services*, AWC 2013.

AWARDS &  
SCHOLARSHIPS

<b>AIIA National iAward</b>	<b>2009</b>
Australian Information Industry Association (AIIA), Callista Tertiary Student Project Category, for the Linux Robotics Framework. Participated in the Asia Pacific ICT Awards, Melbourne 2009.	
<b>Microsoft Imagine Cup Australia</b>	<b>2011</b>
Placed 3rd in Australia for developing <i>Social Alert</i> Disaster Response and Management System.	
<b>ANU International Undergraduate Scholarship</b>	<b>Feb 2006 – Dec 2010</b>
Covered full international undergraduate student tuition fees for entire duration of BSEng/BSc.	
<b>Australian Postgraduate Award</b>	<b>Aug 2011 – Sep 2015</b>
Australian Government PhD stipend scholarship of \$24,653 per annum.	
<b>ANU HDR Top-Up Scholarship</b>	<b>Feb 2012 – Feb 2015</b>
PhD stipend top-up of \$7000 per annum.	
<b>CSIRO OCE Postgraduate Top Up Scholarship</b>	<b>Feb 2011 – Feb 2012</b>
PhD stipend top-up of \$7000 per annum.	
<b>CSIRO ICT Centre Postgraduate Research Scholarship</b>	<b>Feb 2011 – Aug 2011</b>
PhD stipend scholarship of \$20,000 per annum.	

## SKILLS

• <i>Programming Languages</i>	C, C++, Python, Java, Bash
• <i>Parallel Programming</i>	pThreads, OpenMP, C++ 11, MPI
• <i>Accelerator Programming</i>	Nvidia CUDA, OpenCL
• <i>Smartphone Apps</i>	Android SDK
• <i>Version Control</i>	Git, SVN, Github, Gitlab, Bitbucket
• <i>Operating Systems</i>	Linux, Mac OS X, Windows
• <i>Project Management</i>	Atlassian Confluence, Jira, Bamboo, Crucible, Fisheye
• <i>Computer Aided Designing</i>	L <sup>A</sup> T <sub>E</sub> X, Adobe Photoshop, The Gimp

SECONDARY  
EDUCATION

<b>Don Bosco School</b> , Park Circus, Kolkata, India	
<i>Indian School Certificate (ISC)</i>	- Scored <b>93.25%</b> (Within top 0.3%) <b>2005</b>
<i>Indian Certificate of Secondary Education (ICSE)</i>	- Scored <b>94.40%</b> (Within top 0.2%) <b>2003</b>

EMPLOYMENT  
EXPERIENCE  
(RESIDENTIAL  
LEADERSHIP)

<b>Unilodge@ANU</b> , Senior Residential Scholar	<b>Jan 2013 – Oct 2013</b>
<b>Burton &amp; Garran Hall</b> , Canberra, ACT, Australia	
<i>IT Assistant / Webmaster</i>	<b>Feb 2009 – Nov 2009</b>
<i>Summer Senior Residential Scholar</i>	<b>Nov 2008 – Feb 2009</b>

## REFEREES

Available on request