**Curriculum Vitae: Kalyan Shankar Bhattacharjee**

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| Contact Information | Industrial Research Intern, Canon Information Research Systems Australia (CiSRA),  Sydney, NSW. | Tel: +61-420201787  E-mail: k.bhattacharjee@student.adfa.edu.au  Profiles: [GitHub](https://github.com/kalyanb29), [LinkedIn](https://www.linkedin.com/in/kalyan-bhattacharjee-91552215/), [Google Scholar](https://scholar.google.com/citations?user=pyay8TUAAAAJ&hl=en) |
| Career Summary | I am currently on a program leave from being a postgraduate researcher with the School of Engineering and Information Technology, University of New South Wales (UNSW), Canberra to pursue an industrial research internship for six months with the Canon Information Systems Research Australia (CiSRA) in collaboration with Australian Mathematical Sciences Institute (AMSI) on Image and Video Understanding using Machine Learning. Since September 2014, I am a part of the Multidisciplinary Design Optimization Group (WWW: MDO Webpage) at UNSW Canberra. I obtained my B.Tech (Hons.) in 2012, M.Tech in 2013 from Indian Institute of Technology (IIT), Kharagpur, India in Ocean Engineering and Naval Architecture. Between 2013 and 2014, I worked with an e-learning start-up in India (Unbound Learning Networx) for 4 months. As a research associate in IIT Kharagpur, I worked on a project in collaboration with Naval Science & Technological Laboratory (NSTL), Visakhapatnam for 8 months. I currently hold a **permanent residency** status in Australia. | |
| Career Interests | My primary focus lies in the area of theoretical and applied machine learning and multidisciplinary optimization, with a deeper understanding of computationally expensive optimization and artificial intelligence. I am in continuously development of novel, practical and efficient algorithms for the solution of computationally expensive optimization problems in the field of machine learning and big data. Such problems are commonly encountered in virtually all fields of science and engineering, such as in multidisciplinary product design, video understanding, object detection, biochemical pathway modelling, therapy planning, optimal management of natural resources etc. | |
| Education | * Ph.D., University of New South Wales (UNSW), Canberra, Ongoing (Expected to finish by February, 2018). * M.Tech., Indian Institute of Technology, Kharagpur, India, August 2013, CGPA: 8.91/10 * B.Tech.(Hons.), Indian Institute of Technology, Kharagpur, India, August 2012, CGPA: 8.96/10 | |
| Experience | * **Industrial Research Intern**: Development of deep learning for image and video understanding at **Canon Information Systems Research Australia** **(CiSRA)**, Sydney in collaboration with the **Australian Mathematical Sciences Institute (AMSI)**. September, 2017 to March, 2018. **Understanding and Skills**: Image & video understanding, Convolutional neural network (CNN), Recurrent neural network (RNN): Long short term memory (LSTM), Deep learning, Python, TensorFlow, Keras, Sonnet, Theano, CUDA, GPU. * **Tutor**: Engineering Practice and Design: CATIA (ZEIT 1501), First Year Undergraduate Course in S2-2016. University of New South Wales, Canberra, July, 2016 to November, 2016.   **Understanding and Skills**: CATIA, Health and safety, Product design.   * **Research Assistant**: Development of optimization techniques to tackle computationally expensive problems at University of New South Wales, Canberra, July, 2015 to March, 2017. Algorithms developed during this phase are being used in several professional and academic organisation on a regular basis.   **Understanding and Skills**: Heuristics and meta-heuristics, Surrogate assisted optimization, Multifidelity optimization, Multi-and many-objective optimization, SVM, Decision Making, Classification, Clustering, Constraint handling, MATLAB, C++, Microsoft Office, LaTeX.   * **Research Assistant**: Hydrodynamic Design & Development of Trimaran & Delta Hull Forms (Project Code: TDHF), Naval Science & Technological Laboratory (NSTL), Visakhapatnam, India, Dec, 2013 to Aug, 2014. **Understanding and Skills**: Ship design, Hydrodynamics, ShipFlow, MAXSURF, NAPA, AutoCAD. * **Visiting Researcher**: Development of continuum damage model for high impact load using Element Free Galerkin Method, funded by Centre for Advanced Composite Materials (CACM) at the University of Auckland. May, 2012 to Jul, 2012.   **Understanding and Skills**: Damage modelling, thermomechanical modelling, Composites, MATLAB, Fortran.   * **Honorary Research Intern**: Development of transient elasto-plastic model for welding using Element Free Galerkin Method, at the University of Auckland. May, 2011 to Jun, 2011.   **Understanding and Skills**: Transient thermomechanical modelling, Finite Element Method, ANSYS, MATLAB, Fortran.   * **Research Assistant**: Maritime Safety Modelling using Fuzzy Logic, Indian Institute of Technology, Kharagpur, India, July, 2010 to Nov, 2010.   **Understanding and Skills**: Fuzzy logic, MATLAB.   * **Research Assistant**: Automated Oceanographic feature extraction from satellite remote sensing data using Neural Network architecture, Indian Institute of Technology, Kharagpur, India, Dec, 2010 to Feb, 2011.   **Understanding and Skills**: Neural networks, MATLAB. | |
| Certification | * Machine Learning by Andrew Ng in Coursera, Ongoing. * Certificate of Merit in Graduate Teaching Training Programme (GTTP'16). * Certificate of Merit in Lab Supervisor Training (LABSUP'16). * Certificate of Merit in Health and Safety for Lab based supervisor, 2016. * Certificate from Jatiya Vijnan Parishad (Indian Science Congress Association), 2005. | |
| Awards and Honors | * Partner investigator in **Australia-Germany Joint Cooperation Grant** (Singh, Bhattacharjee, Ray, Mostaghim, Moritz) on “Identification of solutions of interest to aid evolutionary multi-objective optimization and decision-making" awarded by **Universities Australia and DAAD** for 2017-2018 (23.5K AUD). * One out of three recipients (worldwide) of 2016 **IEEE CIS Graduate Student Research Grant** on “Decomposition based evolutionary algorithm with a dual set of reference vectors" (2.6K USD). * Recipient of the **Postgraduate Research Student Support (PRSS)** from UNSW (2.2K AUD). * UNSW TFS Scholarship and Australian Research Council (ARC) funded scholarship from Professor Tapabrata Ray, 2014, University of New South Wales (UNSW), Canberra. * Merit-cum-Means (MCM) Scholarship, 2008{2012, Indian Institute of Technology, Kharagpur, India. * Centre for Advanced Composite Materials (CACM) Scholarship, 2012, University of Auckland, New Zealand (4K NZD). * University of Auckland IIT Internship Scholarship, 2011, University of Auckland, New Zealand (5K NZD). | |
| Professional Service | * **Member of the Program Committee** of a number of premier conferences in the field e.g. The Second Australian Conference on Artificial Life and Computational Intelligence (ACALCI'16), The 20th Asia-Pacific Symposium on Intelligent and Evolutionary Systems (IES'16) and The Australian Society for Operations Research National Conference (ASOR'16). * **Regular Reviewer** of top journals in the field: IEEE Transactions on Evolutionary Computation, IEEE Transactions on Cybernetics, Reliability Engineering and System Safety and International Journal of Engineering Science and Technology. | |
| Professional Memberships | * Student Member IEEE Young Professionals * Student Member IEEE Computational Intelligence Society (Membership: 93404718) * Student Member International Society for Structural and Multidisciplinary Optimization (ISSMO) * Affiliate Member, Institution of Mechanical Engineers (IMechE) * Student Member, Royal Institute of Naval Architect (RINA). | |
| Publications | I have authored/co-authored **1** Book chapter, **7** peer reviewed Journal paper, **5** Lecture notes, **3** peer reviewed Conference papers and **1** abstract in Conference. Please view my google scholar profile ([Google Scholar](https://scholar.google.com/citations?user=pyay8TUAAAAJ&hl=en)) | |
| List of Referees | * Prof. Tapabrata Ray, School of Engineering and Information Technology, The University of New South Wales, Canberra, Northcott drive, ACT 2600. Phone: +61 2 62688248, Fax: +61 2 62688276, Email: [t.ray@adfa.edu.au](mailto:t.ray@adfa.edu.au) * Dr. Hemant Kumar Singh, School of Engineering and Information Technology, The University of New South Wales, Canberra, Northcott drive, ACT 2600. Phone: +61 2 62688270, Fax: +61 2 62688276, Email: [h.singh@adfa.edu.au](mailto:h.singh@adfa.edu.au) * Dr. Jeroen Vendrig, Canon Information Research Systems Australia, Macquarie Park, NSW 2113, Email: [jeroen.vendrig@cisra.canon.com.au](mailto:jeroen.vendrig@cisra.canon.com.au) * Dr. Nagita Mehrseresht, Canon Information Research Systems Australia, Macquarie Park, NSW 2113, Email: [nagita.mehrseresht@cisra.canon.com.au](mailto:nagita.mehrseresht@cisra.canon.com.au) * Prof. Qingfu Zhang, Department of Computer Science, City University of Hong Kong, Hong Kong, Phone: +852 34428632, Email: [qingfu.zhang@cityu.edu.hk](mailto:qingfu.zhang@cityu.edu.hk) | |