

Adarsh PATIL

PERSONAL DETAILS

PORTFOLIO / BLOG: <https://adarshpatil.in> ADDRESS: Edinburgh, UK
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EDUCATION

CURRENT DOCTOR OF PHILOSOPHY
UNIVERSITY OF EDINBURGH, United Kingdom [ARM PhD Fellowship]
Research: *Co-designing reliability and performance for datacenter memory*

JULY 2017 M.TECH. (RESEARCH)
INDIAN INSTITUTE OF SCIENCE, Bangalore, India
Thesis: *Heterogeneity Aware Shared DRAM Cache for Integrated Heterogeneous Architectures*
GPA: 6.33/8.0 - *magna cum laude*

MAY 2012 BACHELOR OF ENGINEERING
M S RAMAIAH INSTITUTE OF TECHNOLOGY, Bangalore, India
GPA: 9.40/10.0 - *summa cum laude*

WORK EXPERIENCE ~ 4 YEARS

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| Aug 2017 - Apr 2019 (1 year 8 months) | Research Scientist at INTEL CORPORATION, Bangalore, India HPC Ecosystem and Application Team - projects under NDA * |
| Jun 2012 - Jul 2014 (2 years 1 month) | Technology Analyst at GOLDMAN SACHS, Bangalore, India Core Platform Engineering |
| Jun 2011 - Aug 2011 | Summer Analyst at GOLDMAN SACHS, Bangalore, India Runbook Process Automation |
| Jun 2010 - Sep 2010 | Intern at GAVISTA TECH, Bangalore, India Search Optimization and User Interface for systematic results display |

PUBLICATIONS & TALKS

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| DSN 2023 | Āpta: Fault-tolerant object-granular CXL disaggregated memory for accelerating FaaS |
| ISCA 2021 | Dvé: Improving DRAM Reliability and Performance On-Demand via Coherent Replication https://adar.sh/dve |
| TACO 2017 Best Poster EECS 2017, Presented HiPEAC 2018 | HASHCache: Heterogeneity-Aware Shared DRAMCache for Integrated Heterogeneous Systems https://adar.sh/hashcache-taco |
| ARM/UEd Conf 2021 (Talk) | Improving Reliability and Performance of Datacenter Systems via Coherence https://adar.sh/arm-ed-conf-2021 |
| UK Systems 2021 (Talk) | FaaS with CXL Disaggregated Shared Memory |

PROJECTS

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| ONGOING PROJECTS | Redesigning datacenter co-ordination services for next generation CXL based shared memory Achieving persistence through replicated disaggregated memory |
| PROJECTS AT INDIAN INSTITUTE OF SCIENCE | TLB and Pagewalk Performance in Multicore Architectures with large Die-Stacked DRAM Cache [Tech Report 2015, arXiv] https://adar.sh/caffe-compiler-optimize A Study of Branch Prediction in Android https://adar.sh/BranchPredAndroid Compiler Optimization Transforms Harris Corner Detection: https://adar.sh/compiler-optimize Caffe Neural Networks: https://adar.sh/caffe-compiler-optimize VarMutate: Dynamic Scoping for C Language in clang https://adar.sh/VarMutate Plan IKEBANA: ESS Dimensions Reduction for Plan Bouquet https://adar.sh/PlanIkebana |
| PROJECTS AT GOLDMAN SACHS | Architect, design and implement solutions of various virtualization & linux technologies spanning datacenter compute, storage, networking Hardware and OS Performance Benchmarking & Analysis <ul style="list-style-type: none">• Authored an automated benchmarking framework to run and report performance by running test suites on VMs and Baremetals• Performance analysis & tuning for specialized internal apps (e.g. low Latency, high I/O, memory, network intensive)• Test Suites – SpecJBB, kmake, blacksholes, Dhrystone, Whetstone, Hackbench, Disk tests, Network uperf, lat proc Linux Containers <ul style="list-style-type: none">• Architecting and implementing Containers for Goldman Sachs Cloud• Possess a good understanding of underlying technology Namespaces, Cgroups, SELinux, Network configuration, Libvirt API Thin client desktop VDI solution <ul style="list-style-type: none">• Engineered a Minimized and locked down Linux based solution• Authored several PyGTK and X11 based applications for remote management, diagnostics, troubleshooting and NEA• Network booted, kickstart and preseed based unsupervised install• Engineered a stateless RAM-based network booted system on ARM based hardware Engineering Nested Virtualization (Bromium vSentry) as a security solution Vendor Interaction and liaising – Intel, VMware, Redhat |
| PROJECTS AT M S RAMAIAH INST OF TECH | Spoken language identification using machine learning [Bachelor's dissertation] https://adar.sh/spokenlang SNIDS: An Intelligent & Multiclass Support Vector Machines Based NIDS [ICECIT 2012] https://adar.sh/S-NIDS funded by Defense Research and Development Organization (DRDO), India Line Birds (game) using OpenGL https://adar.sh/linebird A parallel algorithm for Max Flow Algorithm using Ford-Fulkerson method Lead developer of a student focused Linux Distro "ANDROMEDA Linux" |

ACHIEVEMENTS AND AWARDS

- Founding trustee of Dr. M R Gorbal Foundation - a charitable organization which aims to promote research in Physics (2022)
- Best Poster at Electrical Science Divisional Symposium at IISc, Bangalore (2017)
- Completed with certificate of distinction several Data Science Courses from Johns Hopkins University on Coursera (2014)
- “Best outgoing achiever (2012)” - Dept. of CSE at M S Ramaiah Institute of Technology
- First Place at National Level Project Competition held at M S Ramaiah Inst. of Tech (2012)
- Second Place at “Random Hacks of Kindness #2” hackathon (2010)

VOLUNTARY POSITIONS HELD

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| • Informatics Science Communication Group | Dec 2021 - Current |
| • ICSA@Informatics social media communication | Sept 2021 - Current |
| • Teaching assistant/Tutor INF2C-CS, University of Edinburgh | Aug 2019 - Dec 2019 |
| • Student System Admin at CSA Department, IISc | Aug 2014 - Dec 2016 |
| • Teaching Associate for the CUDA Teaching Centre, sponsored by NVIDIA, at the Department of CSE, MSRIT | Jan 2012 - May 2012 |
| • Chairman of VRGLINUX (GNU/Linux users group at MSRIT) Secretary and member of executive committee of IEEE-MSRIT Influential Member of several committees (RoboMSR, CodeMSRIT, Assoc. of Computer Engineers) | 2011-12 |

EXTRA CURRICULAR ACTIVITIES

- Represented IISc in the 12 hour Bengaluru Stadium Run Relay for 2016 and 2018.
Long distance runs : 4 villages half-marathon (UK), TCS World 10k, Bengaluru 10k Challenge, Standard Chartered Mumbai Marathon, Bengaluru Marathon etc.
Personal best times - 5k (19mins), 10k (45mins), half-marathon (1:50hrs), marathon (4:17hrs)
- Periodically author blog articles about my experiences, assessments and outlooks related to my work and hobbies
- Member of environment committee at Goldman Sachs for conducting awareness drives/camps
- One of 4 Indians amongst participants from around the world on a Scholarship Delegation to attend TEDxSummit 2012 in Doha, Qatar
- TEDx licensee, TED Translator, TEDx organizer (TEDxMSRIT 2012)
- Organizer of “Pycon India 2010” and “Random Hacks of Kindness #4”
- Delegated at various conferences/workshops - ISCA 2022, IPDPS 2015, Open Hack India 2010/2011, PYCON India 2010, FOSSEE 2011, Microsoft DreamSpark 2012, Wikipedia Meetup/Bangalore

MISCELLANEOUS

- STRENGTHS
- Adaptability, Quick learner, Hardworking and Dedication
 - Effective communicator and good leadership skills
 - Always updated with latest technology and trends of market.
 - Analytical and mathematical problem solving ability

- HOBBIES
- Avid Runner, Cyclist and Swimmer
 - Cardio/HiT workouts - Les Mills Body Pump, Body Attack , GRIT Athletic
 - Hiking enthusiast - 5 Munros, several Corbetts, coastal and trail walks

OTHER LINKS github.com/adarshpatil
in.linkedin.com/in/adarshpatil

REFERENCES ACADEMIC REFERENCES
Vijay Nagarajan, PhD Advisor
Professor, University of Edinburgh
vijay.nagarajan@ed.ac.uk

Prof. R Govindarajan, Master's Advisor
Professor, IISc
govind@serc.iisc.ernet.in

INDUSTRY REFERENCES
Bharat Kaul
Director, Intel Parallel Computing Lab