Rajesh Pandian M

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"..good teacher teaches, a great teacher inspires."
- H.Narasimhaiah

Education

2016–Present **Ph.D. (Computer Science & Engineering)**, *Indian Institute of Technology Madras (IIT Madras)*, Chennai, India, **Advisors:** Prof. N.S. Narayanaswamy and Dr. Rupesh Nasre.
Thesis Title (proposed): Accelerating Algorithms for NP-Hard Problems on GPUs.

2014–2016 **M.Tech. (Computer Science & Engineering)**, *Indian Institute of Technology Madras (IIT Madras)*, Chennai, India, **Advisor:** Prof. N.S. Narayanaswamy.

2006–2010 **B.Tech. (Information Technology)**, *Thiagarajar College of Engineering (TCE)*, Madurai, India, **Advisors:** Dr.Geetha S and Dr.Muthuramalingam S.

Research Interests

Parallelization High-Performance Computing, GPU Computing.

Algorithms Graph Algorithms, Experimental Algorithms.

Publications

○ Rajesh Pandian M, Rupesh Nasre, N.S. Narayanaswamy. *Accelerating Computation of Steiner Trees on GPUs.* International Journal of Parallel Programming (IJPP), 2022. DOI: `https://doi.org/10.1007/s10766-021-00723-0`.
Open link at `https://rdcu.be/cCa9K`.

○ Rajesh Pandian M, Somesh Singh, Rupesh Nasre, N.S. Narayanaswamy.
An Efficient Inexact Method for the Capacitated Vehicle Routing Problem, Transportation Science, 2022 (under review).

Research/Technical Talks

○ Techniques in Graph algorithms on GPUs – Guest Lecture in GPU course.

○ Accelerating Computation of Steiner Tree on GPUs

○ Accelerating algorithm for NP-hard problems on GPUs

○ Research Practices to students and faculties of TCE, Madurai

○ Teaching CS Lab courses using Replit to Faculties of Govt. Engg. College, Idukki.

○ Advanced Linux Administration to Project Staffs of Computer Center, IIT Madras.

○ Fully Dynamic Maximal Matching on 3-uniform Hypergraphs

Services

- Sub-reviewer: HiPC 2022
- Artifact Evaluation committee: PPoPP 2023, CGO 2023
- Board of Studies Memeber for IT Dept at TCE, Madurai. 2020-Present
- Student member of IEEE Computer Society and ACM India.
- IITM-Linux User Group Member

Work Experience

2021-2022	**Nation Supercomputing Mission Project, IIT Madras**	*Project Associate*
2014-2021	**CSE Department, IIT Madras**	*Teaching Assitant*
2012-2013	**Capegemini**	*Associate Consultant*
2010-2012	**HCL Technologies**	*Database Administrator (DBA)*

Career Achievements

- Awarded outstanding teaching assistant (STAR TA) award thrice: Jan-May 2018 (CS2810), Aug-Dec 2019 (CS1111) Jan-May 2021 (CS1111).
- Part of Software development team in Joint Seat Allocation Authority (JoSAA) 2017 for admissions to IITs, NITs, IIITs and other GFTIs
- Our Resilience team scored 94.57/100 and secured 10th place (from several participants across the globe) in PACE Challenge Track C of IPEC 2018.
- Our Resilience team awarded 3rd place in The Great Mind Challenge [TGMC] in both 2008 and 2009. IBM's TGMC, an All India-level Contest.
- Awarded one of the TOP 30 programmers of TCE in C-Star 2008, an Inter-departmental C-Contest by CSE department, TCE.
- Awarded Finalist of the TOP 25 programmers of TCE in Ergonoxis 2008, an Inter-departmental C-contest by ECE department.

Teaching

Teaching Assistant during Masters and Ph.D.

- **Apr-Jun 2021** (CS1111) Problem Solving Using Computers. 🏆
- **Jan-May 2020** (CS6023) GPU Programming.
- **Jul-Nov 2019** (CS1111) Problem Solving Using Computers. 🏆
- **Jan-May 2019** (CS1200) Discrete Mathematics for Computer Science.
- **Jul-Nov 2018** (CS5800) Advanced Data Structures and Algorithms.
- **Jan-May 2018** (CS2810) Object Oriented Algorithms Implementation and Analysis Lab. 🏆
- **Jul-Nov 2017** (CS6100) Topics in Design and Analysis of Algorithms.
- **Jan-May 2017** (CS2810) Object Oriented Algorithms Implementation and Analysis Lab.
- **Jul-Nov 2016** (CS5800) Advanced Data Structures and Algorithms.
- **Jan-May 2016** (CS2800) Data Structure and algorithms.
- **Jul-Nov 2015** (CS1100) Computational Engineering (at IIT Tirupati).
- **Jan-May 2015** (CS1100) Computational Engineering.
- **Jul-Nov 2014** (CS1100) Computational Engineering.

- Note: 🏆 - Awarded Outstanding Teaching Assistant

Computer Skills

Programming	C/C++, CUDA, Java, SQL, PL/SQL, Python
Scripting	Shell, sed, awk
Databases	MySQL, PostGreSQL, Oracle
Tools	Git, LaTeX, Netbeans
OS	GNU/Linux, Windows

Languages

English	**Read, Write and Speak**	*Professional working proficiency*
Tamil	**Read, Write and Speak**	*Native or bilingual proficiency*

Skill Summary

- Good in CUDA C++ implementations.
- Good in Unix/Shell scripting, Java, SQL and PL/SQL.
- Good knowledge of Databases and DBA activities.
- Oracle Certified Java Programmer [J2SE 1.6].

Projects

GPS-FMS	Online GPS-based Fleet Management System with Dynamic Report Generation. Tracking of fleets is programmed using Telit GM862-GPS module using python.
Manage Prisons	A Web Application to manage and maintain the activities of Prisons all over India. Our Team secured 2nd runner of IBM India's The Great Mind Challenge 2008.
E-COPs	A Web Application to administer all the activities of Police stations all over India. Our Team secured 2nd runner in IBM India's The Great Mind Challenge 2009.
TCESMS	A SMS based auto-responding application for Publishing Semester exam results. Our end-semester examination 2008 results were published using this app.

Hobbies

- Teaching CS on YouTube for school teachers and college students
- Collecting & Watching Animated movies
- Crazy to know & try out new technologies
- Playing Badminton - represented my school and college

(16-Aug-2022)
Chennai, India.