

Durganshu Mishra

e-mail durganshu.mishra@tum.de
Mobile +4915730109560
Website <https://durganshu.github.io/>
LinkedIn [linkedin.com/in/durganshu/](https://www.linkedin.com/in/durganshu/)
GitHub github.com/Durganshu
Address Enzianstraße 7 | 85748 Garching bei München



Education

- Oct. '21 – Present** **Master of Science in Computational Science and Engineering**
Technische Universität München
TUM School of Computation, Information and Technology
Coursework: Advanced Programming, Scientific Computing, Computer Architectures, Parallel Programming, Numerical Algo. for HPC, CFD.
Master's thesis (Ongoing): "Representing Quantum System Information and Topologies in sys-sage" in collaboration with Leibnitz Supercomputing Center, Garching (Germany).
- Jan. '23 – June '23** **Visiting student (Virtual) - EuroTeq**
École Polytechnique, Paris
Coursework: Distributed Systems with Networking
- Aug '16 – July '20** **Bachelor of Technology in Mechanical Engineering**
PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur, India
Department of Mechanical Engineering
Bachelor's Thesis: Numerical Investigation of Jet Impingement Quenching

Relevant Experience

- July '23 – Present** **Technische Universität München**
Hilfswissenschaftler (Research Assistant)
- Involved in performance optimization and identifying potential memory leaks within the sys-sage codebase.
 - Reduced valgrind-reported memory leaks by ~99% in sys-sage (See github.com/Durganshu/sys-sage).
 - Improving the portability of mitos for PEBS and IBS-based computing systems (See github.com/Durganshu/mitos)
- May '22 – May'23** **Intel Deutschland GmbH, München**
Working Student – Cloud Graphics and Gaming
- Performance analysis and benchmarking of Vulkan and OpenGL-based graphics applications on Intel dGPUs and Xeon Processors (using Intel Vtune, C, C++, Linux)
 - Extended the features of OpenGL and Vulkan-based 'gears' graphics application for cross-OS (Linux and Windows) and cross-API compatibilities with on and off-screen rendering.

Aug '20 – Aug '21	Zeus Numerix Pvt. Ltd., Pune, India <i>CAE Engineer (Development)</i> <ul style="list-style-type: none"> Involved in rigorous problem-solving and software development (using C++, Python, and MATLAB) in computational electromagnetism, radar signature prediction, and target detection. Implemented specific features to the in-house developed CAE products and customized them per clientele's needs.
--------------------------	---

Relevant Projects

June '23 – July '23	Abalone game (link) <ul style="list-style-type: none"> A C++ based implementation of an Abalone board game. Implemented Minimax and parallelized Alpha-beta pruning as search strategies. Technologies: C++, Python, OpenMP (tasking).
Apr '22 – July '22	Fluidchen-EM (link) <ul style="list-style-type: none"> A C++ based Computational Fluid Dynamics solver. Integrated with MPI for parallelization on distributed systems. Integrated with preCICE for coupling with other solvers. Technologies: C++, MPI, preCICE
Apr '22	DeepBio (link) <ul style="list-style-type: none"> An AI-based tool to help seniors with a voice-based system. Could be used for automated biography writing and questionnaires. Technologies: Python, PyQt, OpenAI, Codex

Research Publication

Gupta, V., Mishra, P., Mishra, D. , Ghosh, P.	Analysis of Heat Flux Quenching of a SS-316L Rod Using Nanofluids, Heat Transfer Engineering, DOI: 10.1080/01457632.2023.2301157
---	--

Knowledge and Skills

Programming	C, C++, Python, Julia, MATLAB, OpenMP, MPI
Frameworks and APIs	OpenMP, MPI, Pandas, NumPy, SciPy, Matplotlib, Pytorch
Languages	English (Fluent), German (Basic Knowledge: A2), Hindi (Native)

Volunteering

Aug '18 – July '19	Coordinator of Automotive and Fabrication Club, IIITDMJ (link)
Feb '18 – Mar '18	Coordinator, Event Management Team, Abhikalpan 2k18–The Technical Fest, IIITDMJ
Nov '17	Volunteer, Blood Donation Camp, Indian Red Cross Society, Madhya Pradesh, India

Achievements and Extra-curricular

Mar '23	Exchange student at the Universidad Politécnica de Madrid– ATHENS week.
Mar '20	Inter IIIT Sports Meet 2020 Gold Medallist (Football)
Feb '17	Won the 1st prize in 'ROBOWAR' competition, held at Inter-IIIT Techno-Cultural Fest
Jan '16	Qualified for SSB (Service Selection Board) for National Defence and Naval Academy, India