



Tejas Mukund Shinde

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<https://www.quantum.lrz.de/bqcx/presentation-catalogue/speaker-detail/tejas-shinde>

SUMMARY

Self-Organized and detail-oriented master's Student passionate about Quantum Computing and its applications in the real world. Always trying to observe, learn and put the learning into action.

EDUCATION AND TRAINING

MSc High Performance Computing and Quantum Computing [10/2021 – Current]

Technische Hochschule Deggendorf - Website: <https://www.th-deg.de/qc-m>

- + Advanced Mathematics and Physics for HPC/QC + HPC/QC Programming Lab + Networks for HPC/QC
- + Computer Architectures for HPC/QC + Physics for HPC/QC + Software Engineering
- + System Design and Application of HPC/QC systems

Bachelor of Engineering (Mechanical Engineering) [07/2015 – 06/2019]

Savitribai Phule Pune University, Pune, India

- + Thermodynamics + Fundamentals of Programming Language + Numerical Methods and Optimization
- + Heat Transfer + Computational Fluid Dynamics + Mechatronics

Higher Secondary School Examination [06/2013 – 07/2015]

Warana Vidyaniketan And Aabasaheb Patil Jr College of Science, Pargaon

- + Basic Physics, Chemistry and Mathematics

WORK EXPERIENCE

Student Assistant: Quantum Algorithms for CFD problems [11/2022 – current]

Technische Hochschule Deggendorf [Deggendorf, Germany]

- Reviewing different methods to solve CFD problems (Navier-Stokes, Lattice Boltzmann Method).
- Understanding the existing information and studying different Quantum Algorithms.
- Implement and optimized the algorithm to solve a simple CFD problem in the Intel Quantum SDK.

Working Student: Educational Data Centre [08/2022 – current]

Technische Hochschule Deggendorf [Deggendorf, Germany]

- Calculating the power requirement.
- Rack Floor Plan Design and Facility Layout design.
- Investigation of Different Cooling technologies and Future Data Center technologies.

PUBLICATIONS, INTERNATIONAL CONFERENCES PRESENTATIONS

- **Preliminary Lattice Boltzmann Method Simulation using Intel Quantum SDK**
 - ACAT 2022 – 21st International Workshop Advanced Computing and Analysis Techniques in Physics Research (Bari, Italy) Oct 2022, organized by CERN
<https://indico.cern.ch/event/1106990/contributions/4997229/>
 - Bavarian Quantum Computing eXchange – (Garching bei Munich, Germany) | Nov,2022
<https://www.quantum.lrz.de/bqcx/presentation-catalogue/speaker-detail/tejas-shinde>
- **Solving a 2x2 Sudoku using Grovers algorithm on Intel Quantum SDK**
1st Prize, INTEL QUANTUM COMPUTING CHALLENGE, 2nd High Performance Computing and Quantum Computing Symposium, TH Deggendorf | 11-12th January 2023

Internship: Computer-aided Engineering (CAE) Engineer [07/2020 – 09/2020]

Simulation Lab Pvt. LTD Scientific Research and Development [Pune, India]

- Stage II of product testing work on "Multi-Feature on Wing to Enhance Aerodynamic Efficiency".
- Analyzing the prototypes of Multi-Feature Wing on Ansys Fluent Software.

SKILLS

+ Intel Quantum SDK + Qiskit + open MP/MPI + CUDA + Linux

LANGUAGES

English - C1 , German – B1 , Hindi – C1

PROJECTS

- **Master's Thesis project** - Solving CFD problem using Lattice Boltzmann Equation on **Intel Quantum SDK**
- **Atos – Science and Computing** - Solving a 2x2 sudoku using **Grovers algorithm** on **Myqlm**
- Implementing Variable Conductance Diffusion operator, testing the images with different parameters and parallelizing the problem using MPI.
- **1st and 2nd HPC/QC Symposium TH Deggendorf** - Presentation on **HPC System Design** – A professional approach (**with Atos**)
- Working on profiling tools such as **Intel Vtune, Nvidia Visual Profiler**.

TRAINING COURSES

- + **IBM Qiskit Global Summer school, July 18 - 29, 2022.**
- + **Microsoft Quantum Workshop on Azure Quantum.**
- + **Fundamentals of accelerated computing with CUDA C/C++.**
- + **A Hand on Introduction to Engineering Simulations.**

RECOMMENDATIONS -

Thesis Supervisor - Prof. Dr. Helena Liebelt
Quantum Computing Innovator, Head of IT center
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Thesis Supervisor – Prof. Dr. Rui Li
Professor, Faculty of Applied Computer Science
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