Shravar G Tanawde

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PROFESSIONAL SUMMARY

Quantum computing graduate student with research and industry experience spanning quantum algorithms, optimization, linear solvers, and quantum networks and communication protocols. Experienced in developing and simulating quantum algorithms with Qiskit, PennyLane, and QuTiP, and interested in applying quantum computing to scientific and engineering problems. Specialising in quantum algorithm development, computational modeling, and research-oriented software.

SKILLS, TOOLS & CERTIFICATIONS

- **Skills:** Quantum Computing; Quantum Information Theory; Quantum Algorithms; Quantum Optimization; Quantum Cryptography; Graph Theory; Quantum Error Correction; Quantum Sensing
- **Tools & Frameworks:** Qiskit (Aer), Pennylane; NumPy; SciPy; NetworkX; Jupyter; QuTip;
- **Certification:** QGSS 2026 Excellency Badge, PennyLane Challenges

EDUCATION

Indian Institute of Technology Jodhpur **Aug. 2025 - Sept. 2027**
Master of Technology, Quantum Information and Computation | CGPA: 8.38/10.0 *Jodhpur, Rajasthan*

Visvesvaraya National Institute of Technology **Aug. 2018 - Sept. 2022**
Bachelor of Technology, Electrical and Electronics Engineering | GPA: 7.58/10.0 *Nagpur, Maharashtra*

WORK EXPERIENCE

Quantum AI Global **Jun 2026 – Aug 2026**
Quantum Research Intern *Hyderabad, Telangana*

- Built quantum network and communication simulations under active R&D
- Modeled QKD protocols and eavesdropper attack scenarios for security analysis
- Benchmarked protocol performance across noise and channel conditions
- *Detailed methods and internal tooling confidential (NDA)*

Thermon Pvt Inc **Oct 2024 – Jul 2025**
Electrical Design Engineer *Mumbai, Maharashtra*

- Designed 40+ engineering heat-tracing packages monthly with 90% accuracy and on-time delivery.
- Coordinated technical execution across global client projects (Canada, Houston).

PROJECTS

Quantum-Assisted Inverse Design of 2D Tunnel Transistors **Ongoing**

- Developing an inverse design framework for 2D tunnel field-effect transistors
- Integrating NEGF-based quantum transport simulation with device optimization
- Modeling coherent, interacting, and crossover transport regimes
- Establishing a unified inverse-design framework for quantum transport across semiconductor devices

Application of Decoherence noise as means to Improve Quantum Transport by ENAQT **2026**

- Using dephasing noise as a novel way of destroying destructive interferences.
- Simulating FMO Networks to validate the theory.

Biological Imaging using Squeezed Light **2026**

- Quantum Sensing simulation using properties of squeezed light.
- Simulating MZI, Quantum Enhanced SRS and Photothermal Spectroscopy.

Quantum Portfolio Diversification via QAOA **2025**

- Reproduced Kalra et al.'s D-Wave result on gate-based hardware
- Mapped asset-correlation graph to QAOA for diversification
- Applied Louvain clustering to break dimensionality-scaling limit
- Analyzed cost landscapes and cluster-based reductions

Specious Random Number Generator and Tester **2025**

- Created a Specious Random Number Generator.
- Implements the χ^2 statistic for discrete uniform distributions.
- Evaluates both upper and lower critical bound.

Auto Customer Review Categorization **2022**

- Developed an aspect-based sentiment analysis model for customer service interactions.
- Tested multiple models for Aspect analysis and Sentiment analysis, and compared results.

Suntracker on Rocker Bogie Mechanism **2020**

- Built a miniature terrain robot demonstrating stability and mobility.
- Published research in Springer's Advances in Mechanical Engineering.

PUBLICATIONS

- Tanawde, S. (2020). *Suntracker on Rocker Bogie Mechanism.* Springer – Advances in Mechanical Engineering.

RESEARCH INTEREST

Quantum optimization, Quantum Linear Solver, Quantum Error Correction and Noise Mitigation, Quantum Sensing