

GAURAV SHINDE

[Homepage](#) ◇ [Google Scholar](#) ◇ [Github](#) ◇ [LinkedIn](#)

Phone: (+1) 669-210-4063 ◇ **Email:** gshinde1@umbc.edu

EDUCATION

| | |
|---|---------------------|
| University of Maryland, Baltimore County (UMBC) PhD in Information Systems | May 2028 (expected) |
| San Jose State University (SJSU) M.S. in Computer Science <i>Coursework: Deep Learning, Natural Language Processing, Machine Learning, Reinforcement Learning</i> | May 2024 |
| MIT World Peace University (MIT WPU) B.E. in Computer Science <i>Coursework: Design and Analysis of Algorithms, Database Management, Object Oriented Programming</i> | Apr 2021 |

SKILLS

| | |
|-------------------------|---|
| Programming | Python, Java, TypeScript, JavaScript, C, C++, HTML, CSS |
| Machine Learning | Pytorch, Tensorflow, Sklearn, Pandas, Numpy |
| Framework | Spring, Spring Boot, React, Redux, Angular, Android |
| Database | MySQL, PostgreSQL, SQLite, MongoDB |
| Technology | Azure, AWS, GCP, Docker, GIT |

EXPERIENCE

| | |
|--|-------------------------------|
| Mobile, Pervasive and Sensor Computing (MPSC) Lab <i>Graduate Research Assistant</i> | May 2024–Present Baltimore |
| Conducting research on distributed task execution and decision-making strategies for robotic agents operating in contested environments. | |

| | |
|---|---------------------------------|
| Machine Intelligence and Complex Systems (MiCoSys) Lab <i>Graduate Research Assistant</i> | Feb 2023 - May 2024 San Jose |
|---|---------------------------------|

- Developed a noise mitigation strategy by utilizing denoising auto-encoders and wavelet decomposers, enhancing model adaptability to various noise types in battery operational data.
- Designed a modular architecture with a self-attention transformer encoder, achieving a relative error of 0.1674 on NASA data and 0.0330 on CALCE battery data, the best performance reported to date.

| | |
|---|---------------------------------|
| Tech Mahindra <i>Machine Learning Engineer Intern</i> | Jun 2023 - Aug 2023 San Jose |
|---|---------------------------------|

- Detected and masked personally identifiable information (PII) for 60,000 records using Google Data Loss Prevention API, Presidio, and custom Transformer model.
- Achieved cost savings of \$50,000 for a quarter by preventing potential data leaks.
- Spearheaded the development of a web application using Flask, generating custom alerts based on PII sensitivity and occurrence frequency.

| | |
|--|---------------------|
| Insta ICT Solutions Pvt Ltd <i>Software Engineer</i> | Sep 2021 - Jul 2022 |
|--|---------------------|

- Implemented Redux architecture in a React application for efficient state management across components, achieving a 15% reduction in rendering time and improving the user experience.
- Developed a robust middleware logger, resulting in 20% decrease in issue resolution time.
- Achieved 30% reduction in unauthorized access attempts by deploying JWT-based token authentication.

- Integrated PySpark with Azure Synapse to orchestrate efficient data extraction, transformations, and visualization, resulting in a 15% reduction in data processing time.
- Built scalable cloud infrastructure with Azure Data Factory, Databricks, Azure Data Lake Storage, for data extraction from various sources, facilitating seamless visualization on BI tools.

SELECTED PUBLICATIONS

The ranking information is sourced from CORE Computer Science Conference Rankings.

- **Gaurav Shinde**, Nirmalya Roy, co-authors et al. A Survey on Efficient Vision-Language Models. (*Under Review*, **DMKD**), 2025.
- **Gaurav Shinde**, Nirmalya Roy, co-authors et al. TAVIC-DAS: Task and Channel-Aware Variable-Rate Image Compression for Distributed Autonomous System. **IEEE PerCom**, 2025. [A+]
- **Gaurav Shinde**, Souvick Ghosh, co-authors et al. Tracing the Past, Predicting the Future: A Systematic Review of AI in Archival Science. **ASIS&T**, 2025. [A]
- **Gaurav Shinde**, Saptarshi Sengupta, co-authors et al. De-SaTE: Denoising Self-attention Transformer Encoders for Li-ion Battery Health Prognostics. **IEEE BigData**, 2023.
- Shadman Sakib, **Gaurav Shinde**, Nirmalya Roy, co-authors et al. E2RespUNet: End-to-End Respiratory Signal Reconstruction and Rate Prediction Using a Unified Attention-Enhanced U-Net. **IEEE SmartComp**, 2025.
- Shadman Sakib, **Gaurav Shinde**, Nirmalya Roy, co-authors et al. RespFormer: A Motion-Guided Temporal-Frequency Transformer Attention for Contactless Respiratory Health Assessment. (*Under Review*, **UbiComp**), 2025.
- MS Anwar, **Gaurav Shinde**, Nirmalya Roy, co-authors et al. CoOpTex: Multimodal Cooperative Perception and Task Execution in Time-Critical Distributed Autonomous System. **DCOSS-IoT**, 2025.

ACADEMIC PROJECTS

SecureFLEx

Jan 2025 - May 2025

Federated Learning

- Integrated differential privacy (DP) to prevent deep model leakage and leveraged knowledge graph guided selective Grad-CAM activation for efficient, explainable federated image classification.

CineHub

Jul 2023 - Aug 2023

Full Stack Development

hosted, repo

- Created a responsive web app for seamless search and retrieval of movie and TV shows, incorporating intuitive navigation and an user-friendly interface.
- Developed an interactive thumbnail-based system, enabling users to access extensive details such as descriptions, ratings, cast information, and trailers effortlessly.

MENTORSHIP

- **Henry Gardiner**, Sophomore, University of Maryland, College Park Summer 2025
- **Akshay Kamath**, Freshman, San Jose State University Summer 2023

OTHER INITIATIVES

- Serving as a **publicity co-chair** for COMSNETS.
- Developed course modules and assignments as a **teaching assistant** for Ethical Artificial Intelligence.
- Led a five-member team to secure the **Most Innovative Project** award at the 2023 SJSU Exhibition.

REFERENCES

On request.