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## INTERNSHIP APPROVAL LETTER

As a DST-SERB-PI,

This letter certifies that Manikanta Srinivasula served as a Research Intern for three months under my DST-SERB-CRG-Funded Project (Sanction Order: CRG/2022/002437), actively contributing to government-backed research on real-world accessibility solutions.

His internship centred on the DST-SERB project "*Hazard-Free Outdoor Path Navigator for Visually Challenged People*" ([DOI: <https://doi.org/10.1080/17483107.2025.2530674>]). He contributed to hazard detection using YOLOv8, identifying and classifying outdoor obstacles such as manholes, potholes, streetlights, animals, and uneven surfaces into high, medium, and low-risk categories. He further assisted in implementing the Fuzzy Trusted Hazard-Free Routing Path (FTHRP) algorithm to compute optimal, safe routes for visually challenged users.

He played a key role in dataset preparation, model evaluation, and optimization of AI-based routing, ensuring accurate, real-time hazard recognition. His work effectively integrated computer vision and fuzzy logic to build an intelligent assistive navigation framework supporting independent mobility for the visually impaired.

I acknowledge his professionalism and technical excellence during this tenure. This letter formally recognizes his internship and his valuable contributions to the DST-SERB project, advancing inclusive and assistive AI research.

Dr. Vithya Ganesan

Professor, Dept of CSE @ KLU, DST-SERB-PI