

Bharath Vedantha Desikan

M.S. Robotics & Autonomous Systems, Arizona State University

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Research Summary

Robotics researcher working on perception and planning for aerial and aquatic platforms. Interests span Gaussian-process field estimation, information-theoretic and uncertainty-aware planning, and 3D Gaussian Splatting for scene reconstruction, with attention to how these methods behave under noisy state estimates and limited on-board compute and bandwidth.

Education

- 2024 – 2026 📖 **M.S. Robotics & Autonomous Systems**, Arizona State University. GPA: 3.74/4.00
2020 – 2024 📖 **B.Tech. Mechatronics & Automation**, Vellore Institute of Technology, Chennai.

Publications & Thesis

[M.S. THESIS] **Field Estimation and Adaptive Sampling under Positional Uncertainty.**

Advisor: Prof. Jnaneshwar Das.

Arizona State University, 2026. [🔗 ProQuest](#)

[PRESENTED] **Depth-Variance Guided Next-Best-View Planning for Active 3D Gaussian Splatting Reconstruction.**

B. Vedantha Desikan, R. Staggers Jr., K. Prashar, C. Torre, J. Das.

IEEE International Conference on Automation Science and Engineering (CASE), 2026. [🔗 IEEE Xplore](#)

[PUBLISHED] **Low Cost ASV for High-Resolution Spatio-Temporal Aquatic Field Reconstruction via Dynamic Kernels.**

B. Vedantha Desikan^{*}, R. Staggers Jr.^{*}, J. Das.^{*} ^{*}equal contribution.

IEEE ICRA 2025 Workshop on Robots in the Wild.

[PRESENTED] **Active Gaussian Splatting for Autonomous Reconstruction Using D-Optimal Next Best View Planning.**

K. Prashar, C. Torre, R. Staggers Jr., **B. Vedantha Desikan**, J. Das.

IEEE International Conference on Automation Science and Engineering (CASE), 2026. [🔗 IEEE Xplore](#)

Work Experience

- Jun – Jul 2026 📖 **Research Aide — Robotics Perception & Simulation**, NASA STTR, DREAMS Lab, Arizona State University.
Jan – Jun 2024 📖 **Research Intern**, Shimono Laboratory, Yokohama National University, Japan.
May – Jun 2023 📖 **ROS 2 Intern**, ROBIS, Motherson Group.

Skills

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| Robotics | 📖 ROS 2 • PX4 Autopilot • Gazebo • Informative Path Planning • Next-Best-View Planning • SLAM. |
| ML & Perception | 📖 Gaussian Processes • 3D Gaussian Splatting • Uncertainty-Aware Planning • PyTorch • GPyTorch • OpenCV. |
| Systems | 📖 Low-SWaP Hardware • Bandwidth-Constrained Autonomy • GPS-Denied Operation. |
| Tools | 📖 Python • CUDA • MATLAB • Linux • Docker • Git. |