Vishnu Venkatesh

linkedin.com/in/vishnuv96 +91 82209 86602 vishnu.venkatesh1296@gmail.com

PROFILE

Adaptable engineer with a track record for developing solutions in robotics and non-destructive evaluation, with a focus on autonomous vehicles. Leveraging a multidisciplinary background in Engineering Physics and 3+ years of cutting-edge R&D experience to advance ideas from inception to commercial realization. Expertise in engineering management, rapid prototyping, mechanical design and software development.

WORK EXPERIENCE

Manager, Products and Research

Planys Technologies, Chennai. (August 2021 – Present)

R&D in the domain of underwater robotics. Responsible for product development and improvement, literature and market research, mentorship, publication and presentation of academic papers and patents.

NDT Payload for Magnetic Crawling Robot (May 2024 - Present)

Developed a scanning UT (ultrasonic thickness) payload for a magnetic crawler, with real-time thickness estimation and mapping capabilities, for inspection of large metallic structures.

Control System for Autonomous Surface Vehicle (ASV) (Jan 2024 - Feb 2024)

Designed and implemented the software architecture and control system for a waveglider to conduct autonomous navigation and acoustic analysis of a marine environment.

Control System for Autonomous Underwater Vehicle (AUV) (Aug 2023 – Mar 2024)

Implemented and field-tested a robust autonomous control system for an AUV, integrating obstacle detection and avoidance capabilities using navigational sonar. Developed signal processing and visualisation programs for the AUV payload. Successfully demonstrated vehicle and payload functionality to clients.

Underwater Acoustic Positioning System (April 2023 – Present)

Developed an underwater acoustic positioning system for the localisation of targets in reflective environments to improve the efficiency and accuracy of inspections conducted in spaces where the vehicle is not visible to the operators.

Internet-of-Underwater-Things (IoUT) (Feb 2022 – Dec 2023)

Developed and deployed a protoype IoUT device for underwater asset management to supplant manned inspections at remote locations. Success of the prototype preceded the establishment of a new IoUT vertical in the company which has delivered market-ready units to clients.

Laser Based Defect Depth Estimation (Feb 2022 – Aug 2023)

Developed a patent-pending system to extract dimensions of surface defects using only visual information to improve inspection efficiency by minimizing the need for subsequent manual measurements.

Vision Based Positioning System (Jan 2022 – Aug 2023)

Invented a patent-pending monocular, passive, vision-based positioning system for real-time localisation of targets in enclosed places to improve the efficiency and accuracy of inspections conducted in spaces where the vehicle is not visible to the operators.

Underwater ROV-Based Non-Destructive Evaluation (Aug 2021 – Oct 2023)

Technical Experience

Programming
- Python
- C
- C++

Modeling and Analysis
- SolidWorks
- MATLAB
- COMSOL

Competencies
- 3D CAD and Manufacturing
- Software Development
- Digital Signal Processing
- Image Processing
- Data Acquisition and Processing
- Mathematical Modeling

Content Development
- Microsoft Office
- Google Suite
- LaTeX

Languages
- English (Fluent)
- Tamil (Conversational)
- Hindi (Conversational)
- French (Basic)
- Japanese (N4)

Extracurriculars
- Public Speaking
- Origami
- Machining
- Piano
- Cooking
- Sanskrit

Vishnu Venkatesh

Developed EMATs (electro-magnetic acoustic transducers) for inspection of metallic specimens and an impact echo system for concrete specimens to expand the scope of ROV based inspection capabilities. Successfully tested both systems underwater in a lab environment.

PUBLICATIONS

V. Venkatesh, *et al*, "A system and method for determining 2D localization of a target in confined spaces," India Patent Application 202441043379, filed Jun. 4, 2024.

V. Venkatesh, *et al*, "A system and method for estimating dimensions of surface defects and flaw gauge thereof," India Patent Application 202441072882, filed Sep. 26, 2024.

V. Venkatesh, *et al*, "Quantitative Non-Destructive Testing (NDT) of Submerged Civil Concrete Structures Using Remotely Operated Robotic Drones," *NDT-CE 2022*, pp. 1-8, August, 2022.

V. Venkatesh, *et al,* "Assessment of Structural Integrity of Submerged Concrete Structures Using Quantitative Non-Destructive Techniques Deployed from Remotely Operated Underwater Vehicles (ROV)," *OCEANS 2022 - Chennai*, pp. 1-6, May, 2022.

V. Venkatesh, *et al*, "Non-Destructive Testing of Quay Walls Using Submersible Remotely Operated Vehicles (ROV) In Waterways Around the North Sea Coast," *OCEANS 2022 - Chennai*, pp. 1-6, May, 2022.

EDUCATION

Bachelor of Applied Science, Engineering Physics (ENPH)

University of British Columbia (UBC), Vancouver (2020)

Magnetic Mapping of SRF Cavities, TRIUMF (2019)
Worked in a team to simulate, design and construct a tri-axial Helmholtz coil array to study magnetic flux trapping in superconducting cavities.

Moving Magnetic Field Particle Trap Decelerator, CRUCS (2018)
Worked in a team to simulate, design, fabricate and test a prototype section of a linear magnetic particle decelerator to create ultra-cold particles.

UBC ENPH Robot Design Competition (2016)
Designed and fabricated the mechanical assembly of an autonomous transport robot.

UBC Orbit Design Team (2015)
Designed the chassis and internal layout of a CubeSat designed to identify forest fires.

IB Diploma Program

Abu Dhabi International School, Abu Dhabi (2014)

EXTRACURRICULARS

Toastmasters *(2009 – Present)*

- Participated in Toastmasters clubs in many cities worldwide.
- Experienced public speaking coach and mentor for youth and adults.