Aswin Vattapparambathu Jayaprakash

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Graduate student specializing in Extended Reality (XR), Real-Time 3D Visualization, and Computer vision. Passionate about developing photo-realistic XR environments and interactive media technologies to enhance virtual communication.

EDUCATION

IMLEX - MSc Engineering, Lighting and XR | MSc in Optics, Image, Computer Vision, Machine Learning and Multimedia | MSc of Computer Science • Finland | France | Japan • 09/2024 - 09/2026
University of Eastern Finland | Universite Jean-Monnet | Toyohashi University of Technology

BSc (honors) in Physics • Hindu College, University of Delhi — Delhi, India • 11/2020 - 07/2023

WORK EXPERIENCE

Research Assistant
Hindu College, University of Delhi — **Delhi, India • 06/2023 - 01/2024**

- Reviewed laser-based headlamp tech, highlighting ADB, luminous efficiency, and challenges in heat, safety, and cost.

Research Intern
D S Kothari Centre for Research and Innovation in Science Education — **Delhi, India • 06/2023 - 07/2023**

- Analyzed Gaia DR3 with Python and SQL to identify extra-tidal stars, confirming core collapse and galactic tidal effects.

Research Assistant
Hindu College, University of Delhi — **Delhi, India • 06/2022 - 08/2022**

- Built a low-cost Arduino system with TCS230 sensor for real-time, calibrated visible light wavelength detection.

PROJECTS

Face-to-Ball: Deep Learning-based Lighting Transfer (using synthetic data) — 03/2025 - 05/2025
Jean Monnet University, France

- Synthesized a dataset of facial images and lighting conditions using 3D modeling tools and Trellis AI.
- Designed and trained a U-Net architecture (with ResNet34 backbone) for relighting tasks based on facial cues.

Real-Time 3D Color Cloud Visualization (WebGL & Three.js) — 02/2025 - 02/2025
Jean Monnet University, France

- Developed a real-time interactive color cloud visualization system in Three.js and WebGL
- Designed and implemented GLSL shaders for rendering RGB, CIExyY, and CIELAB color spaces
- Integrated VR/MR interactions on Meta Quest, allowing users to manipulate video and color clouds in 3D

Performance and Stress Detection Using Eye Tracking Data — 11/2024 - 12/2024
University of Eastern Finland, Finland

- Designed and conducted a study using Tobii Eye Tracker to explore the effects of time pressure on performance and stress.
- Developed gaze analysis workflows using IDT algorithms for saccades and fixation detection.
- Strong overlap with Human-Computer Interaction and Data Science

Path Planning for Robotics — 12/2024 - 12/2024
University of Eastern Finland, Finland

- Built a robot navigation system using the A* algorithm; implemented simulation in ROS2 with obstacle-avoidance.
- Connected to algorithmic foundations and real-world robotics control.

SKILLS

- **Programming languages:** C++, HTML, Python
- **Languages:** English (Bilingual), French (Beginner), Hindi (Bilingual), Japanese (Beginner), Malayalam (Native)
- **Soft skills:** Creativity, Critical thinking, Organisation, Time management
- **Software/Tools:** CUDA, DaVinci Resolve, Keras, Latex, OpenMP, PyTorch, ROS2, Scilab (Matlab alternative), Three.js, WebGL, WebXR