




Shylesh Kumar

Date of birth: 04/10/1996

Nationality: Indian

CONTACT

 Barcelona, Spain

 shyleshkumar4012@gmail.com

 (+91) 8122327669

 <https://darkwolf007.github.io/mysite/>

 <https://github.com/Darkwolf007>

 https://www.instagram.com/shylesh_dw/

 <https://www.linkedin.com/in/shylesh-kumar-b930a9100/>

EDUCATION AND TRAINING

2022 - 2023 Barcelona, Spain

● **Master's Degree in Parametric Design in Architecture** Universitat Politècnica de Catalunya · Barcelona Tech

Address Barcelona, Spain | Grade 9.0

2014 - 2019 Vijayawada, India

● **Bachelor of Architecture** School of Planning and Architecture

Address Vijayawada, India | Grade 7.0

2010 - 2014 Chennai, India

● **Schooling - 10+2** Bhaktavasalam Vidhyashram

Address Chennai, India | Grade 80%

2022 - CURRENT

● **Dip. Introduction to VR and AR** XTIC - IIT Madras

WORK EXPERIENCE

05/2021 - CURRENT Chennai, India

● **Co-Founder** xBuild

Blender / Rhino / Grasshopper / QGIS / Unreal/ IFCjs / Python / Threejs

We at xBuild, are a multi disciplinary team of architects, planners, software engineers and developers working on various design solution and ideation on intersection of AEC domain.

1. We have designed a semi automated **workflow to optimize 3d model** and host online as immersive architectural experience.
2. To unlock easy access for people, our workflow works with **digital archiving for existing monumental structures**.
3. Proposed a automated design generation tool which generates apartment design **optimizing against various tangible and intangible design parameters**(in Conceptual development)
4. Experimenting with **WebGL and IFC tools on intersection of digital twin and metaverse**

10/2022 - 01/2023

● **Freelance Computational Consultant** Uniteck

Rhino / Grasshopper / C# / IFCjs / Threejs

1. Developed **design configurator of modular units and optimized** it for web.
2. Developed **pipeline to generate GFC information using IFCjs**, grasshopper and Speckle.
3. Designed algorithmic workflow to **generate module and aggregation of modules**.

09/2022 - 12/2022

● **Freelance Computational Consultant** Curzon & Partners Pty Ltd

Blender/ Rhino/Grasshopper/QGIS /Unreal/ IFCjs /Threejs

1. Worked on designing and **optimization of facade** using parametric design
2. Worked on developing schematic form-finding for interiors
3. Developed a pipeline to **generate GFC using Rhino and Revit** using Rhino.Inside interoperability

08/2021 – 2022

Freelance AEC QC Scaled Robotics

1. Worked on point cloud validation against BIM
2. Worked on LiDAR validation against BIM

08/2020 – 04/2022

Design Architect Sustecture

Rhino / Grasshopper / Blender / Design builder / Ecotect / C#

1. Worked on achieving **sustainable residential and commercial design using computational design.**
2. Worked on various levels of interior and execution projects
3. Worked on **assessment of green building using IFC4**
4. Researching on various **computational design workflows intersecting** with traditional Indian architecture.
5. Proposed a workflow for post-covid office **remodeling design strategies based on social distancing** and HVAC ventilation using CFD simulations

05/2020 – 08/2020 Hyderabad, India

Freelance Designer Pepper and Tarragon

Archicad / Karamba / Rhino / Grasshopper

1. Worked as Inhouse designer for restaurant chain
2. **Designed and executed the structure made of steel**
3. **Optimized and LCA analysis for structure.**
4. Interior for various on site amenities
5. Branding for the chain restaurant including website and display furnitures.

07/2019 – 07/2020 Hyderabad, India

Junior Researcher Indian Institute Of Technology(IIT)

ROS/ Gazebo / Reality capture / Meshlab / Zbrush / Unreal / Unity / C#

As a junior research fellow, worked for DST(dept. of science and technology, Govt of India) with Dr.Shiva ji(Dept of design) on digital heritage project "Creating Digital Heritage of Representative Architectural Marvels from Each State of North East India".

1. Developed a pipeline to **optimize textured point cloud data and use it for VR applications.**
2. Worked on **projection mapping and holographic installation** as designer using creative code and real time feedback sensors
3. Worked with IITH DIC(Design Innovation center) on **creating VR narrative of various heritage structure in Hyderabad using Drone photogrammetry, terrestrial LIDAR scanning and 3D optimization.**
4. Experimented with **Gcode generation of 3D printer using non planar and load based adaptive slicing** techniques.
5. Experimented on **Flight path generation for drone** using parametric design, object detection and feeding it back using ROS.

04/2018 – 05/2020 Hyderabad, India

Research Assistant Sri Design Lab

Digital fabrication /Microcontroller / Houdini / Rhino / Grasshopper / Python

1. Worked on furniture design with **Corian using CNC laser, CNC milling and thermoforming** as fabrication technique
2. Worked on designing **computational design course structure for IAAC GSS 2018**
3. As research intern, majorly experimented with minimal wastage fabrication techniques using kirigami and auxetic structures.
4. Experimented on **biomimetics based generative form to design 3D printed lamps** and interior accessories
5. **Co-tutored fabrication and generative design** workshops

09/2017 – 05/2019 Chennai, India

Assistant Tutor Digital IntuitionX

Digital fabrication / Zbrush / Rhino / Grasshopper / Houdini / TouchDesigner

1. Dlx is a Design consortium promotes the used of computation in art, architecture and design
2. **Co-tutored computation and new media workshops** in NASA(national architecture student association) annual event 2017,2018
3. Co-tutored computation to NASA(national architecture student association) annual event 2017,2018 and 2019
4. **Worked on optimization and fabrication of various installation** as the output of each mentioned event.

11/2017 – 04/2018 Bangalore, India

Architectural Intern Cadence Architects

Digital fabrication/ Zbrush / Rhino / Grasshopper

1. Worked on conceptual and schematic proposal for various residential and commercial design
2. With use of **computational tools majorly worked on generating and optimizing facades** for commercial projects.
3. Worked on interior design and site management

DIGITAL SKILLS

MODELLING

Grasshopper 3D | Rhinoceros 3D | nTopology | CloudCompare | zbrush | Blender 3D,

BIM, CIM AND INTEROPERABILITY

ARCHICAD | QGIS | Rhino.Inside | ReCap | Speckle | IFCjs | Reality Capture | Mesh Lab | Revit

GAMEDEV

unity3d | Armoury3d | unreal engine

ANIMATION VFX

Houdini Side FX | Blender3D | 3DS Max | Adobe Creative Suite

VISUALIZATION

Blender, 3D modeling | Lumion | Octane Render | Vray 3D rendering | NVIDIA Omniverse

VISUAL SCRIPTING

grasshopper | Dynamo | Blender | Touchdesigner | VVV Programming

CODING

processing.js | P5.js | Python | Web HTML CSS | C# (Grasshopper API for Rhino) | ThreeJS | WebGL in Unity

SIMULATION/ ANALYSIS

Autodesk Ecotect | Rhino3D with Grasshopper | Kiwi3D | ROS Gazebo | Karamba3D | Design Builder

FABRICATION

CAD/CAM and CNC Machining | SLA 3D printing experience | Virtual and Augmented Reality | Gcode | Extended Reality | KUKA | Electronic schemas/diagrams | FDM 3D printers

DATA CAPTURE

photogrammetry | synthetic data | LiDAR | iot | Basic knowledge of Arduino, Raspberry Pi and Angular 7.

LANGUAGE SKILLS

MOTHER TONGUE(S): Tamil

Other language(s):

English

Listening
C1

Reading
C1

Spoken production
C1

Spoken interaction
C1

Writing
C1

Telugu

Listening
C2

Reading
A1

Spoken production
C2

Spoken interaction
C1

Writing
A1

Hindi

Listening
C1

Reading
A2

Spoken production
C1

Spoken interaction
C1

Writing
A1

ADDITIONAL INFORMATION

Workshops, Training and Hackathons

2022

Carbon Footprint Optimization

Performance Network

2022

IFCjs Crash course

IFCjs

2022

BIM with Knowledge graphs. Co-designing buildings.

DigitalFUTURE world

2022

Digital Twins: Analyzing the built environment

Performance Network

2022

Threejs Journey

Bruno Simon

2021 - 2022

Introduction to Deeplearning and ML

GUVI - IIT Madras

2021

MIT 6.S191 Introduction to Deep Learning

MITx courseware

2021

MIT 6.034 Artificial Intelligence

MITx courseware

2021

MITx 6.0001 Introduction to Computer Science & Programming in Python,

MITx courseware

2020

India initiative Hackathon

MIT

2019

Game development using Unity

T-Hub IIIT Hyderabad

2017

Generative Morphology

Design Morphine

Publications

Exploring 3D Modelling of Architectural Plan using Camera Tracing

Kumar, Shylesh., Ji, Shiva. 2020.. Science and Technology Journal Vol. 8 Issue 2 July 2020

Adaptive Slicing for 3D printing based on Load Concentration

Kumar, Shylesh., Ji, Shiva. (2024) at 3rd International Conference on Industry 4.0 and Advanced Manufacturing

Optimized Workflow for Photogrammetry based High Poly Mesh Simplification for 3D Printing.

Kumar, Shylesh., Ji, Shiva. (2020) at International Conference on Digital Fabrication (Design, Art and Technology) 2020 Taiwan

Automating the Flight Path of Drone for Architectural Photogrammetry

Kumar, Shylesh., Ji, Shiva. (2022) ICoRD'23 (9th International Conference on Research Into Design)

Creating Digital Immersive Heritage Experience of Historically significant Architectural Structure

Kumar, Shylesh., Ji, Shiva. (2024) 3rd International Conference on Industry 4.0 and Advanced Manufacturing

Conferences and seminars

2021

ICoRD'21 (8th International Conference on Research Into Design)

2021

neurIPS

2020

CDRF 2021----The 3rd International Conference on Computational Design and Robotic Fabrication

2020

DigitalFUTURES World CDRF Conference

2020

ACADIA 2020 DISTRIBUTED PROXIMITIES

2021

ACADIA 2020 Realignment towards critical computation

2021

CAADRIA 2021 PROJECTIONS

2022

NVIDIA GTC 2021- AI developer conference

2022

DigitalFUTURES World

Honours and awards

2016 NASA

ANDC top 10 shortlist

2017 NASA

IDC runner-up

2019 US consulate, T-Hub and IIIT Hyderabad

Most Edifying Game Games for good

2016 NASA

Zonal NASA college trophy citation

2022 Ultratech

Top 5 shortlist Build with speed

Recommendations

Enrique Soriano Director

MPDA, UPC ESTAV, BarcelonaTech

Email enrique.soriano@coda-office.com

Dr. Shiva Ji Assistant Professor

IIT Hyderabad

Email shivaji@des.iith.ac.in

Ar.Lokesh Bharathidasan Principal Architect

Sustecture

Email lokesh.arau@gmail.com

Ar.Shridhar Mamidalaa Pricipal designer

Sri design Lab