SINGH AVINASH DILIP KUMAR | 16MT30017

METALL & MAT.ENGG. METALL.ENGG. (M.Tech Dual 5Y)

EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2021	M.TECH Dual Degree 5Y	IIT Kharagpur	6.74 / 10
2016	CBSE (XIIth Board)	Doon Senior Secondary School	87.6%
2014	GSEB (Xth Board)	D.R. Amin Memorial School	81.3%

INTERNSHIPS

Nowyk | AR/ML Developer [April, 2020 - June, 2020]

Aim: To create a realtime markerlessfoot detection and measuring app using ARCore, OpenCV, and mediapipe
- Developed an app for measuring distance between two points using **depth-API** and developed an **OpenCV plugin** for Unity
- Trained a **mediapipe model** for foot detection using the graph visualizer and optimized the model for lower end phones

Meraki | VR/Software Developer [May, 2019 - July, 2019]

- Developed a **virtual reality training module** for road safety in Unity and created a **360 3D animation** as a tutorial
- Worked on a 360 social documentary on the queer community as a **stitcher** and assisted the shoot for the NGO 'Aravani'
- **Built** and **tested** a windows touchscreen application for a handloom museum with a footfall of over **200** on a daily basis

PROJECTS

Masters' Thesis Project [Aug, 2020 - Present]

Aim: To develop a Machine Learning model for predicting the lattice thermal conductivity of inorganic materials
- Read and reviewed literature, and compared the performance of the previous ML models with other semi-empirical models
- Performed recursive feature elimination using linear support vector regression algorithm on the initial feature vector

Bachelors' Thesis Project | Safety Analytics and Virtual Reality Lab, IIT Kharagpur [July, 2019 - April, 2020]

Aim: To create a VR training simulator for crane operations in the steel industry, designed specifically for Ferrous-Alloy Plant
- **Modeled** a ferrous alloy plant in Blender3d; and **UV-unwrapped** and created unique textures for the materials in photoshop
- Created **prefabs**, and **animations** for objects and set up **colliders** and **triggers** for each object using low poly meshes in Unity
- Imported and set up the factory in Unity, integrated oculus and created crane, and hook movement and operations

Summer Project | Safety Analytics and Virtual Reality Lab, IIT Kharagpur [May, 2018 - June, 2018]

- Setup Complex **blueprint** and animations to simulate realistic accident scenarios in a steel factory in Unreal Engine 4
- Used physics engine along with blueprint and inbuilt animator: **Matinee**, to simulate realistic physics and trigger accidents

COMPETITION/CONFERENCE

Smart India Hackathon | National Finalist [Jan, 2020 - Aug, 2020]

Aim: To create a realtime automated software solution for "Pedestrian Safety and Driver warning system for smart vehicles"
- Trained a **faster RCNN** model for pedestrian detection and a **SSD** model for detection and classification of traffic signs
- Extracted the **ROI** and used **Optical Character Recognition** to recognize speed limit in the frame in realtime using **Pytesseract**
- Obtained listed speed of the road (GPS Location) using **Snap to Road API** and predicted speed limit using Local Insights

Product Design : General Championship | Silver [Jan, 2019 - March, 2019]

- Ideated and designed an ergonomic automated CPR: ReCPRation considering the cost of the materials, and its feasibility
- Developed and rigged a 3d model using blender and illustrated the real life workings of the product through an animation

Case Study : OpenIIT | Bronze [July, 2017]

- Analyzed the effects of AI on the onset of 4th industrial revolution and conducted a SWOT, and PEST analysis for the same

POSITIONS OF RESPONSIBILITY

Design Team Head | COMPOSIT [July, 2018 - April, 2019]

- Spearheaded the creative development segment of 12 juniors; created and maintained all the necessary materials for the fest
- Designed and administered all the work related to hoarding designs, social media releases and publicity materials

Campus Affiliate | Kshitij [June, 2016 - April, 2017]

- Worked in a team of 30 campus affiliates responsible for the publicity and ground level execution of Kshitij-2017
- Responsible for planning and managing the Guest Reception & transportation of **150+** guests and **3000** outstation participants

SKILLS AND EXPERTISE

Courses: Programming and Data Structures, Computer Applications in Metallurgical Processes Laboratory, Language Processing for E-Learning, Partial Differential Equations, Probability and Stochastic Processes, Dominate ARCore 1.x (MOOC)
Programming Languages and Tools: C#, C++, C, Python, Git,/GitHub, HTML, CSS
Softwares and Libraries: Adobe Photoshop, Premiere Pro, Blender, Unity, Vuforia, ARCore, OpenCV, Tensorflow

EXTRA CURRICULAR ACTIVITIES

Self: Designed and developed portfolio using HTML, CSS and php which can be found at **https://1avinash.github.io/Portfolio/**
Sports: Part of the 24 man football team of IIT Kharagpur(2017-2019), and also represented the institute at Spardha, IIT BHU
Sports: Represented the institute in chess at Spardha, IIT BHU and secured 6th position among 20+ teams
Cultural: Mentored a team of 6 members in shooting, directing, and editing the film as a mentor/member of TFPS
Gaming: Qualified for the semi finals for CS:GO at the event XRIG-Supernova in spring fest, 2020 among 30+ teams

!self declaration by the student