

The background is a dark blue gradient with several large, glowing, organic shapes in shades of blue and purple. These shapes resemble liquid droplets or bubbles. Scattered throughout the scene are numerous smaller, semi-transparent spheres of varying sizes, also in blue and purple tones, creating a sense of depth and movement.

harsukh deol

PORTFOLIO

Table of Contents

- Part 0: Resume Game.....4
- Part 1: Work Experience.....7
 - JAM3.....8
 - Unity Development.....9
 - TikTok AR Filter.....13
 - Front End Development.....15
 - Thomson Reuters.....16
 - Front End Development.....17
 - UI Design.....19
 - Graphic Design.....20
 - DEI & Associates.....22
 - Revit Python Scripts.....23

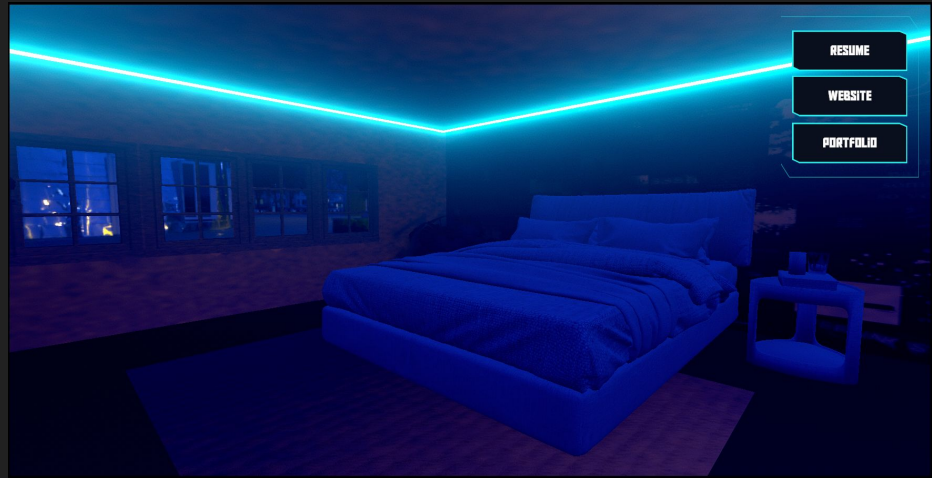
Table of Contents

- Part 2: Personal Projects.....26
 - AR Filters with Snapchat.....27
 - WebGL with Three.js.....28
 - CSS and SVG Art.....29
 - 3D animations with Blender.....30
 - After Effects Animations.....31
 - UI designs.....32
 - Art.....33
- Part 3: Contact.....36

PART 0:

Resume Game

- Created aesthetically pleasing indoor scene of bedroom with objects that opened different parts of my resume
- Implemented lighting system with baked global illumination
- Created custom assets and used external fonts to create interesting UI elements
- Added custom HDRi environment map
- Lowered frame rate from almost 15 fps to under 60fps



Reduced build size by 60% by:

- Removing extra lights and using emissive materials with bloom instead
- Using planes with textures instead of 3D models for the door and window
- Reduced the Level of Detail of the bed, desk and plant models
- Reused the same UI materials for different buttons
- Reducing the resolution of shadows

Build Repo:

<https://github.com/harsukhdeol/resume-game-build>

Source Repo:

<https://github.com/harsukhdeol/portfolio-game>



PART 1:

Work Experience

SEPT 2020 - DEC 2020

Creative Developer

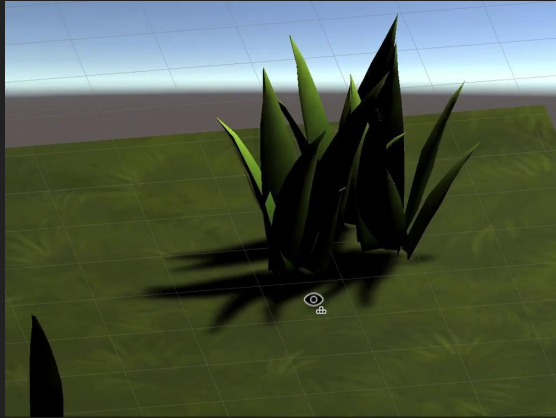
JAM3

Unity Development



- Used Unity's Particle System to create particles that followed different paths
- Coded trefoil (left), knot (middle) and helix (right) functions with parametric equations (in C#) that updated the position of the Particle System on every frame

Shader Development



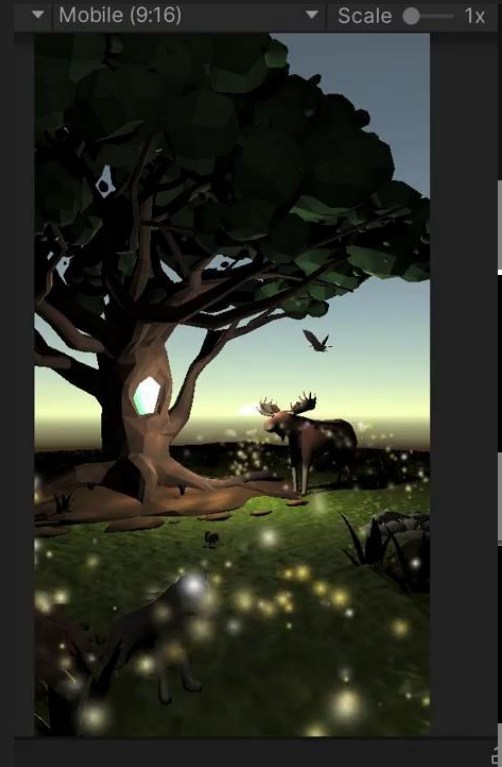
- Developed fragment and vertex shaders with HLSL to color grass and animate it to moving with the wind (left)
- Used step and clip functions to create growing tree animation (right)

Lighting System

- Implemented lighting system for AR mobile game
- Used light probes and reflection probes to bake global illumination
- Used mixed lighting with shadowmap lighting mode to bake lighting for static and distant
- Added post processing to create different ambiances (next slide)
- Optimized performance by reducing the number of lights and reflection probes used

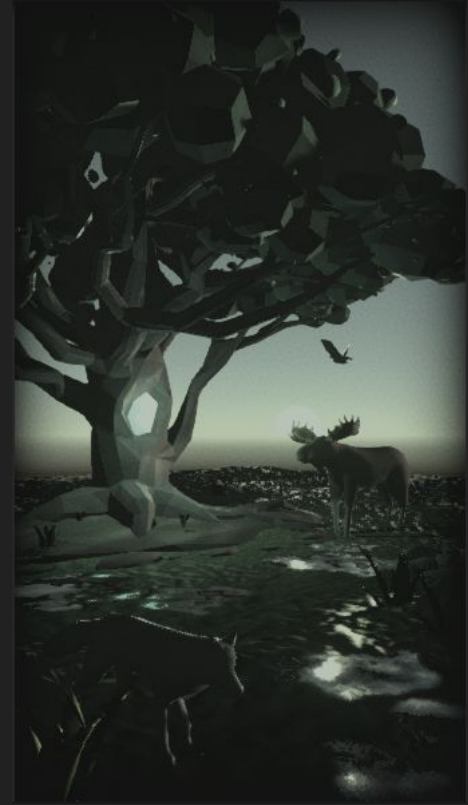
Full Lighting Report:

https://drive.google.com/file/d/18e9hn4SC71r_B7DV628SZPKUUo1TWtFx/view?usp=sharing



Lighting System

- Used Post Processing to create magical sunset scene (left) and polluted scene (right)
- Used Git LFS and GitHub for source control



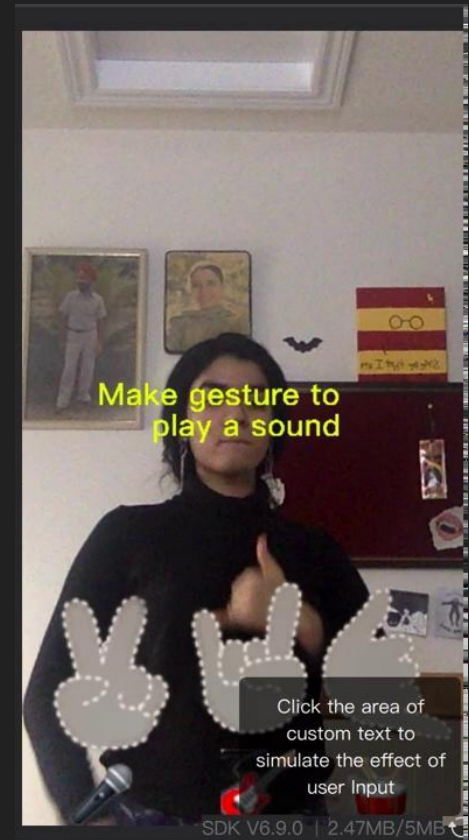
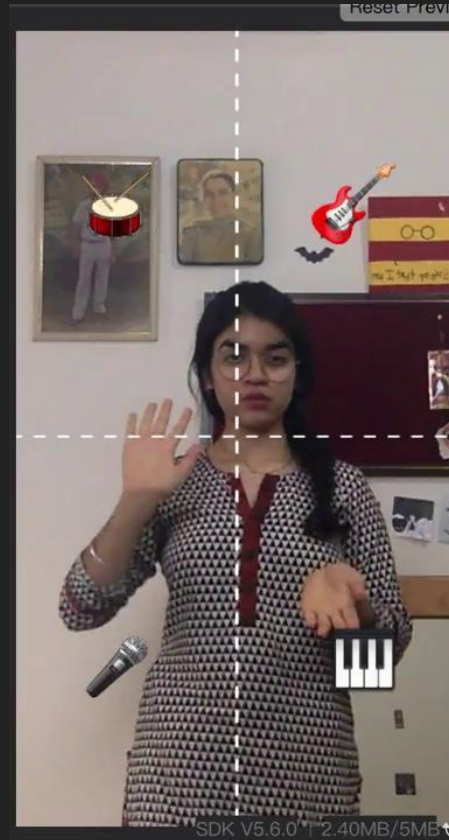
TikTok AR Filter

- Worked with artists to design the UI and UX of this Tiktok Effect
- Created behavior scripts to trigger animation and sound when hand is over a section of the screen
- Determined the sounds, animations and screen effects to be used
- Used TikTok's Effector App to test on multiple devices



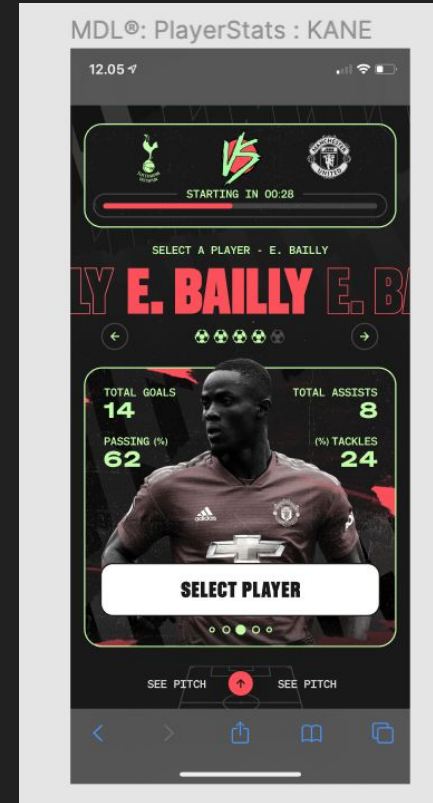
TikTok AR Filter

- Tested various designs and hints (text and animation) to determine the most intuitive design (left)
- Tested different hand triggers to find the most reliable one (right)



Front End Development

- Created components for mobile web app with React and Next.js from scratch
- Used Redux to handle state
- Used GSAP for animation
- Tested each component with Storybook
- Worked in a agile team with Jira
- Used GitHub for version control



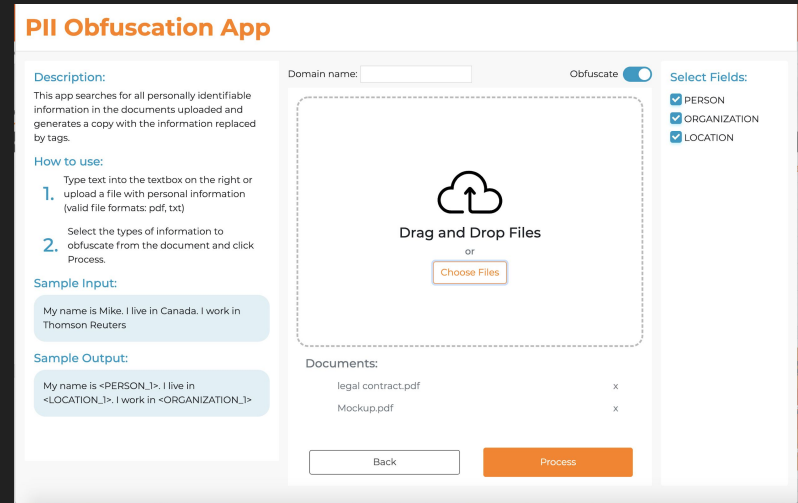
JAN 2020 - APRIL 2020

**Front-End Developer &
UX/UI Designer**

**Thomson
Reuters**

Front End Development

- Created mockups and conducted user interview to design UI for PII (personally identifiable information) obfuscation app
- Developed complete front-end with React and Bootstrap and shipped app
- Styled desktop app with Python Tkinter
- Implemented asynchronous REST API calls to sent and display obfuscated data
- Created download feature that saved the result on the screen into a doc or pdf
- Debugged with Chrome and React Dev tools



Front End Development

Unobfuscated data

Obfuscated result

PII Obfuscation App

Description:
This app searches for all personally identifiable information in the documents uploaded and generates a copy with the information replaced by tags.

How to use:

1. Type text into the textbox on the right or upload a file with personal information (valid file formats: pdf, txt)
2. Select the types of information to obfuscate from the document and click Process.

Sample Input:

My name is Mike. I live in Canada. I work in Thomson Reuters

Sample Output:

My name is <PERSON_ID>. I live in <LOCATION_ID>. I work in <ORGANIZATION_ID>

Domain name:

Obfuscate

Select Fields:

- PERSON
- ORGANIZATION
- LOCATION

My name is Mike. I live in Canada. I work in Thomson Reuters

PII Obfuscation App

Original Developer Mode

My name is Mike. I live in Canada. I work in Thomson Reuters

Filter by:

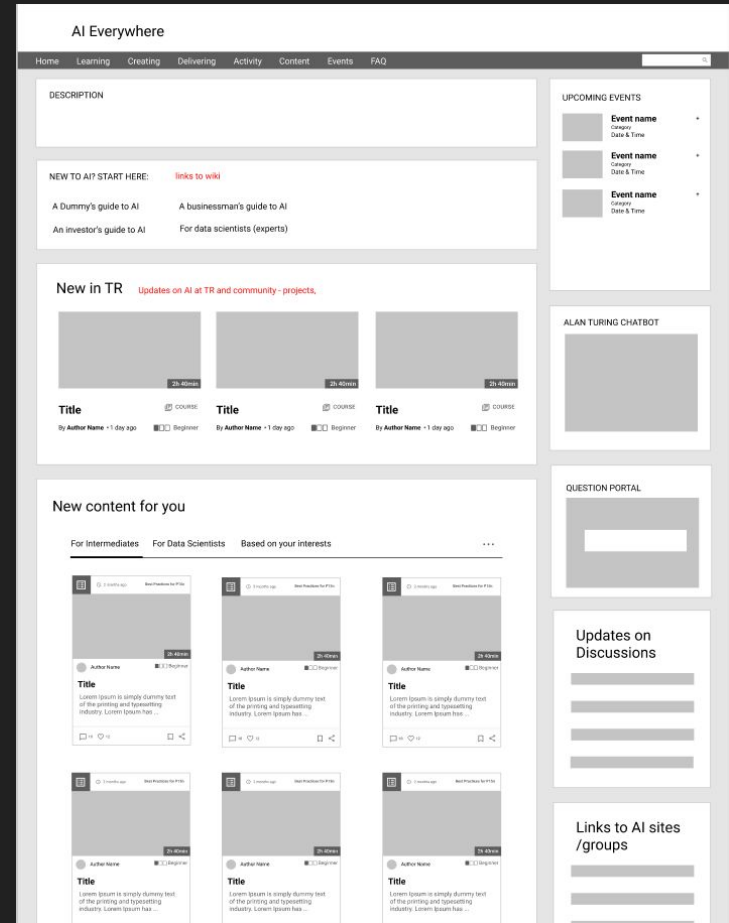
- People
- Locations
- Organizations
- Phone Numbers
- Credit Cards
- Email Addresses

Converted

My name is <PERSON_ID>. I live in <LOCATION_ID>. I work in <ORGANIZATION_ID>

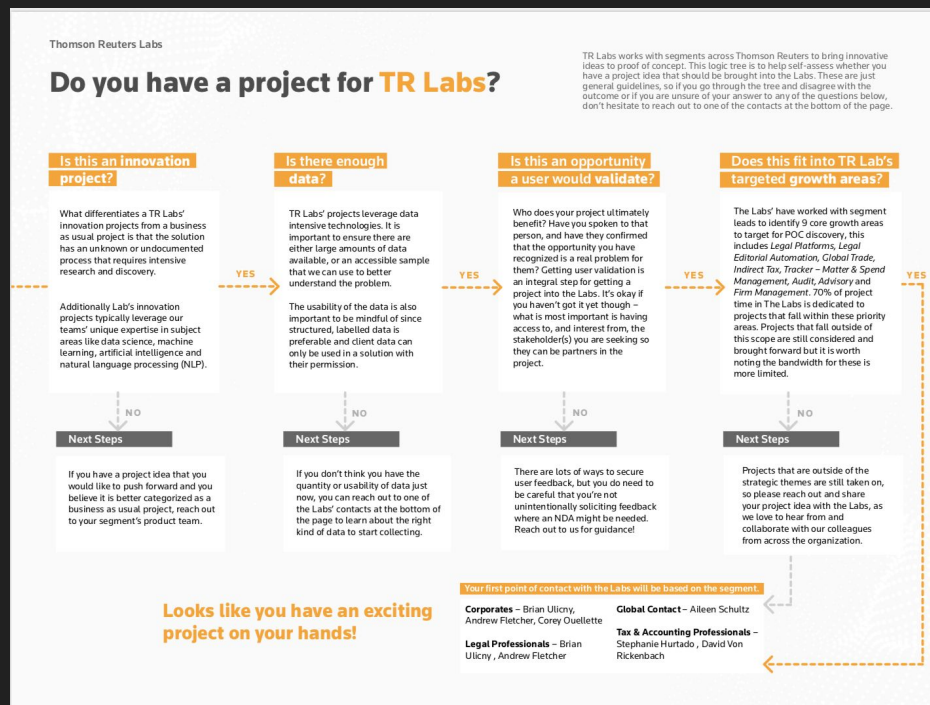
UI design

- Ideated on several designs for new section in TR's company website
- Used user research and survey data to create solutions for the UX issues in the current website
- Came up with new features, like recommended content, to increase user engagement
- Worked with limited website template components to organize all the features into an experience that is easier to navigate
- Created designs in Figma



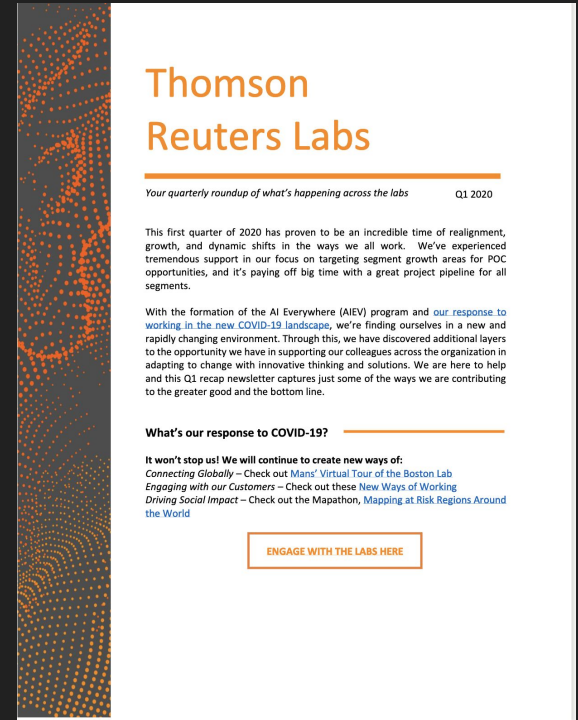
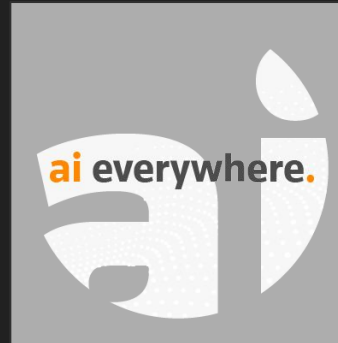
Graphic design

- Redesigned project workflow diagram to be more organized and understandable
- Reorganized layout of information so text could be large enough to be read clearly and have more white space
- Created flowchart and added color to make information easier to understand
- Chart used by TR Labs to determine feasibility of new project



Graphic design

- Designed logo for new AI initiative using TR brand colors and signature dot pattern, used by TR Labs now [1500+ employees] (left)
- Designed in Illustrator
- Redesigned TR newsletter with brand colors and iconography, read by all TR employees
- Created template in Word so non-technical users could easily edit the content



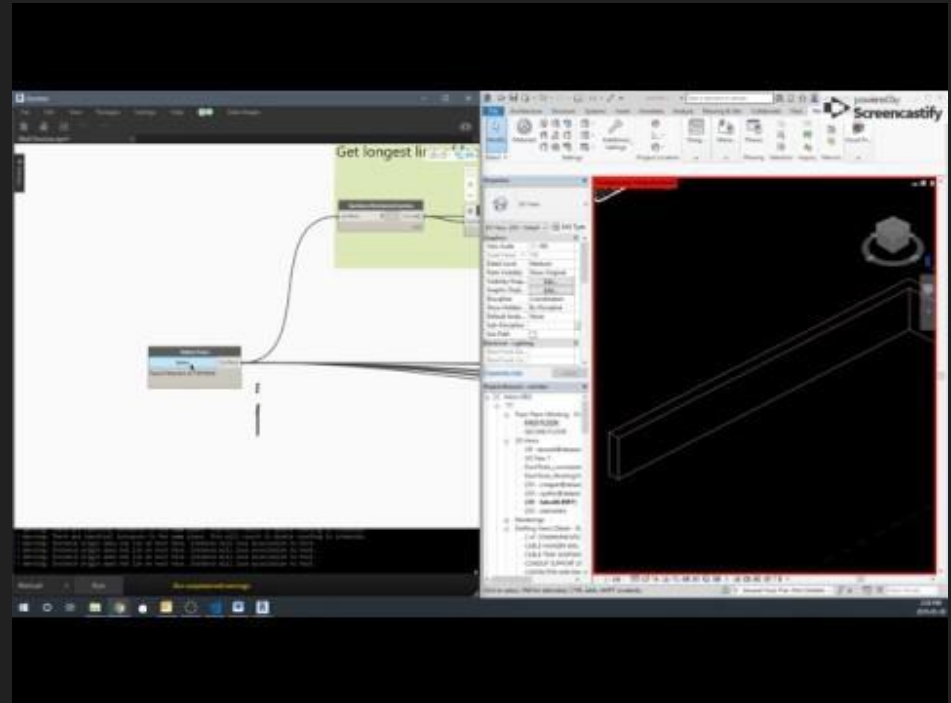
MAY 2019 - AUG 2019

3D Software Developer

**DEI &
Associates**

Revit Python Scripts

- Used node-based scripting software in Revit (3D CAD software for buildings) to automate technical drawings
- Created custom Python scripts using Dynamo API to perform more complex algorithms
- Created UI, documentation and tutorial videos to help engineers unfamiliar with programming run the scripts
- Created about 20 different programs that automated mechanical and electrical drawings



Automate receptacle fixtures on walls

Automatically label and number objects based on category

The screenshot displays the Autodesk Revit 2019.2 interface for a mechanical plan view of Level 2 - HVAC (East). The software is automatically labeling and numbering objects based on their category. The main drawing area shows a complex ductwork system with various components labeled, including:

- STANDARD BRM (SE213, SE212, SE211, SE210)
- SOILED (SE215)
- 700x400 EA DUCT UP & DN
- 900x400 RA DUCT UP & DN
- WR (SE212B, SE210B)
- 200x150 ducts
- PRIVATE BRM (SE203B, SE204B, SE208B, SE207B)
- CORR (SE217)
- 8x8 200
- E1
- 250x150 ducts
- 150x150 ducts

The Project Browser on the left shows a hierarchical tree structure for the project, including levels for Working Nat, ROOF, HVAC, Hydronic, and P&D. The Dynamo Player window on the right shows a script titled "C_TAG_BY_FAMILY_2019" with a "Number of Tags Created" field. The Properties panel at the bottom right shows the properties for the selected object, including Text, Extents, Crop View, Annotation Crop, View Range, Associated Level, Scope Box, Depth Clipping, Identity Data, View Template, View Name, Dependency, and Title on Sheet.

At the bottom of the screen, there is a notification from Screencastify: "Screencastify - Screen Video Recorder is sharing your screen." with buttons for "Stop sharing" and "Hide".

Add duct and pipe fittings at specified position on ceiling (start at 0:40)

Autodesk Revit 2018 - Testing Model.rvt - Floor Plan: 1_Ground Floor - HVAC

File Architecture Structure Systems Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins Megara Modify

Modify Wall Door Window Component Column Roof Ceiling Floor Curtain System Mullion Railing Ramp Stair Model Model Line Model Group Room Room Separator Tag Room Area Boundary Tag Area By Face Shaft Wall Vertical Dormer Level Grid Set Show Ref Plane View

Select - Build Circulation Model Room & Area Opening Datum Work Plane

Project Browser - Testing Model.rvt

- Views (all)
- Floor Plans (111_Working)
 - 0_T/O Footing - Working
 - 1_Ground Floor - Working
 - 2_Second Floor - Working
 - 2_Second Floor - Working_JON
- Boiler Room - JON
- Boiler Room - Working
- FTW
- NEW FLOOR PLAN
- Roof Plan - STM
- Roof Plan - Working

Floor Plans (Overall Plan - HVAC)

- 1_Ground Floor - HVAC
- 2_Second Floor - HVAC
- Roof Plan

Floor Plans (Overall Plan - Hydronic)

- Floor Plans (Overall Plan - Plumbing & Drainage)
- Ceiling Plans
- 3D Views (3D View - No Building)
- 3D Views (3D View - Working)
- Sections (1_Working Section)
- Sections (1_Working Section 2)
- Sections (6_Duct Riser)
- Drafting Views (Detail)
- Drafting Views (Ductwork Details)

ACOUSTIC LINING

- BRICK VENT
- CEILING EXHAUST FAN
- CONCENTRIC VENT THRU ROOF
- DRYER LINT FILTER
- DUCT CONSTRUCTION
- DUCT ELBOWS AND TRANSITIONS
- DUCT SUPPORT IN CEILING
- DUCT THRU ROOF
- DUCTED GRILL OF SPIRAL
- EXHAUST FAN ON ROOF
- EXHAUST GOOSENECK DETAIL
- GAS VENTS WITH STACK BAND
- PREFABRICATED ACOUSTIC SOUND PLENUM
- ROUND BRANCH DUCT
- SPIN-IN COLLAR
- SQUARE DUCT BRANCH TAKEOFF
- TRANSFER DUCT - JOE

Cannot Use Work Plane

The work plane of this view cannot be used for this operation. This operation should be performed in another view or the work plane of this view should be set to a level by using the Work Plane command.

Close

Properties

Floor Plan - Overall Plan - HVAC

Floor Plan: 1_Ground Floor - HVAC Edit Type

Graphics

- View Scale: 1:100
- Scale Value: 1:100
- Display Model: Normal
- Detail Level: Medium
- Parts Visibility: Show Original
- Detail Number: 1
- Rotation on Sheet: None
- Visibility/Graphics Overrides: Edit...
- Graphic Display Options: Edit...
- Orientation: Project North
- Wall Join Display: Clean all wall joins
- Discipline: Mechanical
- Show Hidden Lines: By Discipline
- Color Scheme Location: Background
- Color Scheme: <none>

System Color Schemes: Edit...

- Default Analysis Display: None
- Sub-Discipline: 6_Print_Ductwork
- Sun Path:

Underlay

- Range: Base Level: None
- Range: Top Level: Unbounded
- Underlay Orientation: Lock down

Extents

- Crop View:
- Crop Region Visible:
- Annotation Crop:
- View Range: Edit...
- Associated Level: GROUND FLOOR
- Scope Box: None
- Depth Clipping: No clip

Identity Data

- View Template: Ductwork
- View Name: 1_Ground Floor - HVAC
- Dependency: Independent
- Title on Sheet: GROUND FLOOR PLAN...
- Sheet Number: M11
- Sheet Name: 1_GROUND FLOOR PLAN

Properties help Apply

Ready

Screencastify - Screen Video Recorder is sharing your screen. Stop sharing Hide

Main Model

11:00 AM 2019-08-30

PART 2:

Personal Projects

AR Filters with Snapchat

- Created 2D and 3D assets
- Implemented face and hand triggers
- Scripted 2D and 3D animations
- Implemented UI elements for the user to customize the filter
- Scripted custom behaviours
- Filters have over 2.3 million views and 40 thousand shares

To try my filters, search “Harsukh” in the Snapchat app or copy the snap link to SnapLens Desktop

View all filters on desktop:

<https://lensstudio.snapchat.com/creator/Y9vZ5BLdpADhDDu9NFqWcA>

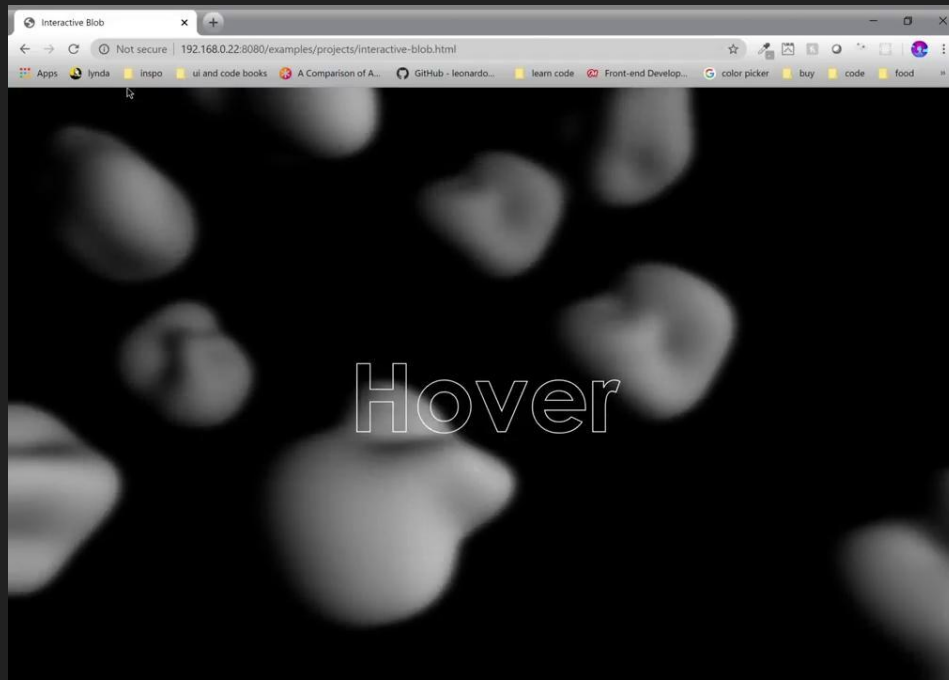


WebGL with Three.js

- Used perlin noise to create abstract blobs
- Determined the blob the mouse was pointing at with Raycaster
- Created JS function that changed the color of the blob on hover
- Added post processing with Three.js

Code:

<https://github.com/harsukhdeol/web-graphics-portfolio/blob/master/examples/projects/interactive-blob.html>

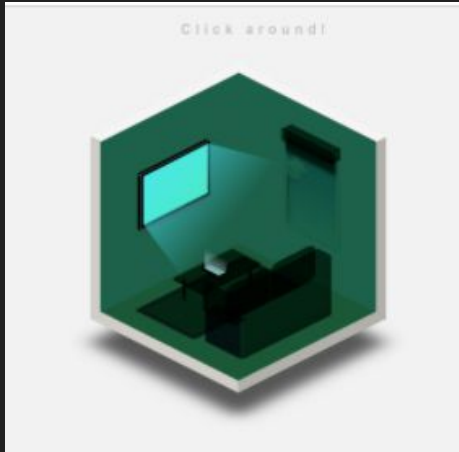


CSS and SVG Art

Created isometric room with HTML div tags and CSS 3D transformation

Added interactivity with on-hover animations

<https://harsukhdeol.github.io/web-graphics-portfolio/css/css-room/index.html>



Used SVG noise and drop shadow filters on HTML rectangles to create clouds

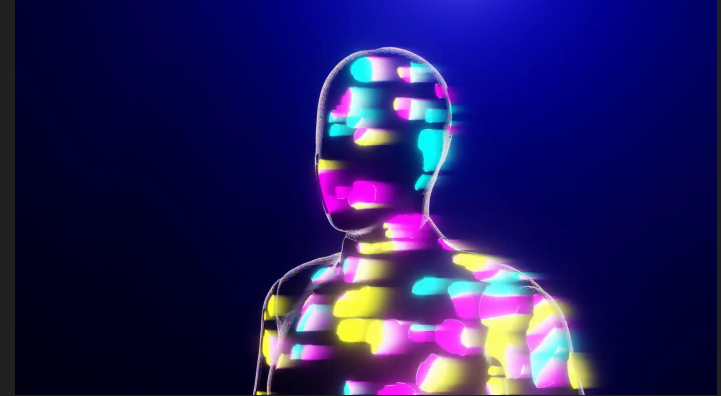
Used CSS to create animation loop

<https://harsukhdeol.github.io/web-graphics-portfolio/css/eclipse.html>



3D Animations with Blender

- Created custom materials with the node based material editor (all)
- Modelled 3D objects (all except bottom right)
- Created scene and setup lighting for abstract animations (all)

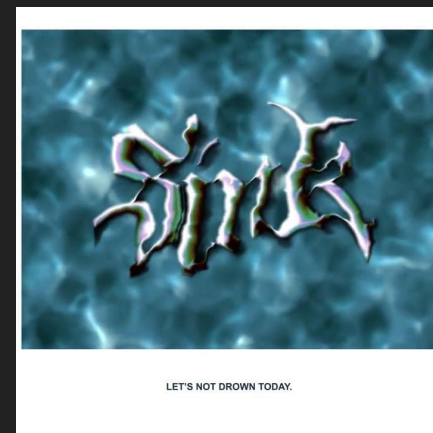
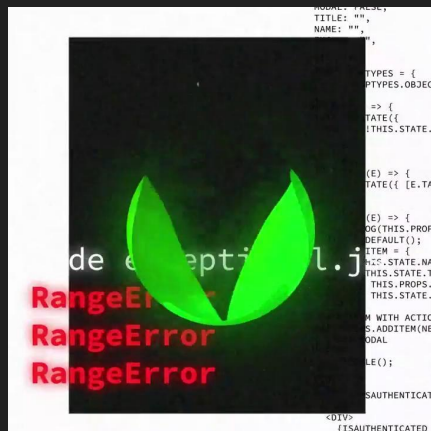


View more on:

<https://harsukhdeol.github.io/web-graphiccs-portfolio/#blender>

After Effects Animations

- Experimented with a variety of effects to create 2D and 3D animations
- Used no external assets

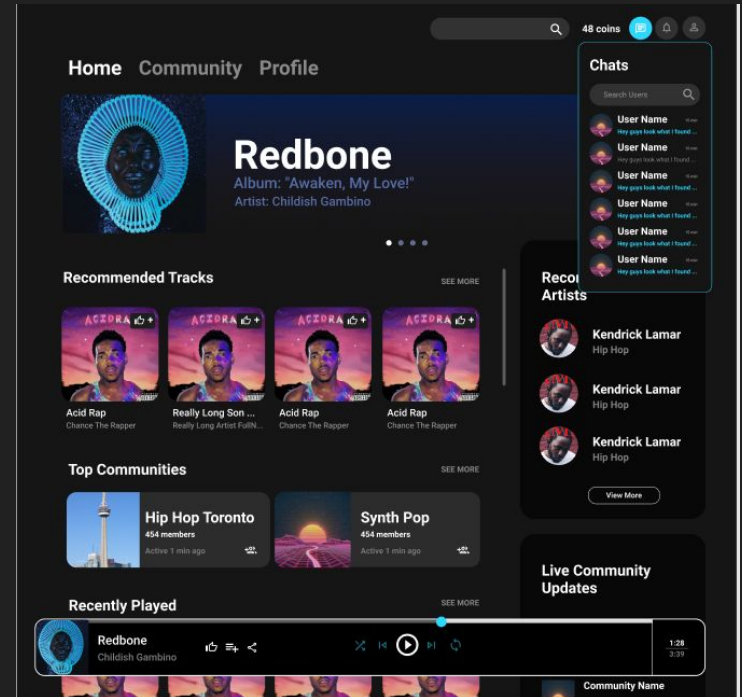


UI Designs

Test Designs for JAM3's web app



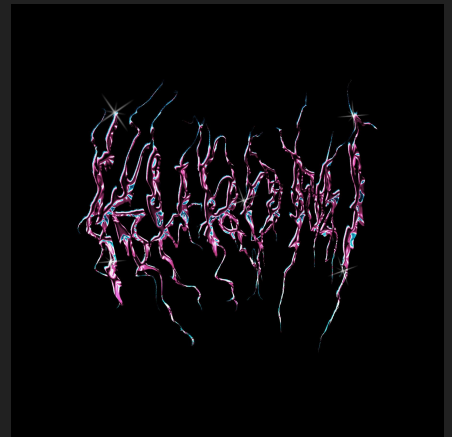
Homepage UI for Music Sharing Web App



Art

Artwork created in Photoshop and Illustrator

View more: <https://www.instagram.com/harsukh.deol/>



Painting with Photoshop



Simpsons

Referenced original Simpsons characters to create Indian characters



PART 3:

Contact Info

Email: harsukhkdeol@gmail.com, hk4deol@uwaterloo.ca

Linkedin: <https://www.linkedin.com/in/harsukh-deol-861920177/>

Instagram: <https://www.instagram.com/harsukh.deol/>

Github: <https://github.com/harsukhdeol>

Website: <https://harsukhdeol.com/>

Project Demos: <https://harsukhdeol.github.io/web-graphics-portfolio/>