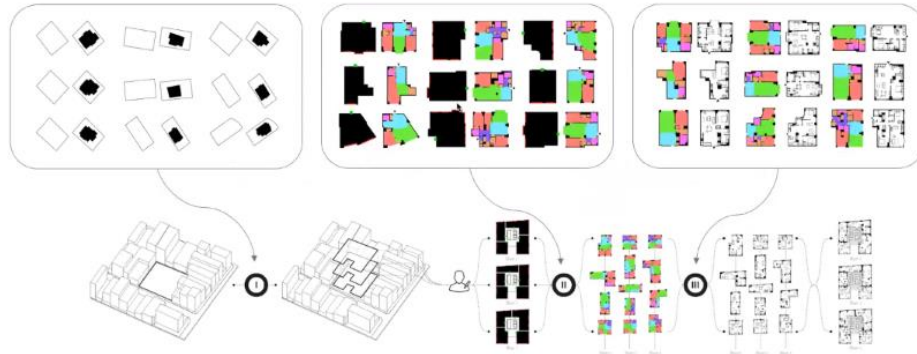


Reflective Essay

Mayur Mistry

- **Designs Exploration**

- Semanticism Architecture Style using ML
- Generative Design using Generative Adversarial Network (Eg. GAN)



Source : ArchiGAN

- This will develop a new approach towards studying precedent study, training a model and extracting high level features / images from the precedent image.
- **Emergent human behavior**
 - Simulation of human conditions and spatial usage using Reinforcement learning (Similar ML model used in AlphaGo)
 - This will uncover new techniques and insights on human centric design.
 - It will bring forward creative design measures which the world has never seen before or had taken for granted.
- **Human – Machine Collaboration**
 - Creative coding interfaces with human-machine dynamic input leading to creative solution. (Eg. Oculus Rift)
- **End to End Manufacturing and Construction**
 - Automated construction + Computer Vision based models measuring construction tolerance and site safety checks alongwith construction resource optimization and assets tracking using reinforcement learning will result in significant productivity and efficiency.
- **Extended Reality (XR)**
 - Computing power of edge devices like android, ios, raspberry pi etc has tremendously increased (Morse law) which deployment of ML models in these devices more accurate.
 - Using XR + Apple LiDAR camera and ARkit, one would be able to construct 3D model just from images and might also eliminate the need of 3D modeling in future.
- **Geospatial Data Science**
 - With availability Big Data and super computing, one will be able to generate data driven feature engineering from urban analysis that will create useful design insights.
- **Game Development** (Procedural Content Generation), **Algorithmic coding** and **App Development** using Houdini / Unity and **Computer Graphics + Data Visualization** courses would be common in architecture education.