APRAMEYA PANDIT

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EDUCATION:

Carnegie Mellon University   *Pittsburgh, PA, USA*

Master of Science in Sustainable Design (Current – May 2021) | Domains of Focus – Construction Automation, Sustainable Design (Solar Radiation – PV Cells, Storm water management), BIM, BEM, Environmental Performance Modelling, Data Science and Computational Design.

Visvesvaraya Technological University   *Bengaluru, India*

Bachelor of Architecture (May 2018) | Domains of Focus - Parametric Design, Design Thinking, Project Management, Architectural Design, Structural Analysis, Building Construction & Energy Simulation.

SKILLS:

Architectural Engineering: Autodesk AutoCAD (Certified by an AATC) AutoCAD Civil 3D, Autodesk Revit (BIM) (Certified by AATC), Dynamo, Autodesk Flow Design (CFD), Autodesk 3ds Max, CATIA V5, Trimble Sketchup, Blender, Unreal Engine 4 (Real-time Rendering), V-Ray, Keyshot, Lumion, Adobe Creative Cloud Suite [Adobe Experience Design (UI/UX), Photoshop, Illustrator, InDesign, After Effects and Premiere Pro], Rhinoceros 3D and Grasshopper (including allied plugins like GhPython, Ladybug, Honeybee, Kangaroo Physics and DIVA).

Fabrication & X-Reality Platforms: RhinoCAM (CNC Milling), Autodesk Fusion 360 (3D Printing + CAM), Vuforia AR (Unity), Unreal Engine 4 (VR - C++ Blueprints) and Enscape (VR).

Programming Languages: Python, JavaScript, Pearl, HTML, CSS, Processing and Arduino.

Robotics Software: RobotStudio (ABB RAPID for 6+DOF Industrial Robotic Arms), HAL Robotics, Machina Bridge and ROS.

WORK EXPERIENCE:

Graduate Research Assistant – FRC Funded Project, Carnegie Mellon University   *Pittsburgh, PA, USA*

Generative algorithms & Multi-Objective Facade Optimization under Prof. Azadeh O. Sawyer   *May 2020 – August 2020*

Teaching Assistant – Virtual Reality, Carnegie Mellon University   *Pittsburgh, PA, USA*

Computational design + VR with Prof. Stephen R. Lee and Prof. Azadeh O. Sawyer   *March 2020 – May 2020*

Graduate Research Assistant – Data Analytics, Carnegie Mellon University   *Pittsburgh, PA, USA*

Data Analytics for Environmental Systems and Sustainable Design under Prof. Vivian Loftness   *January 2020 – March 2020*

Graduate Teaching Assistant – Robotics, Carnegie Mellon University   *Pittsburgh, PA, USA*

Introduction to Architectural Robotics (48755) under Robotics Fellow Ardavan Bidgoli, Construction Automation   *January 2020 – May 2020*

Founding Partner & Principal Researcher – TAAD Studio   *Bengaluru, India*

Professional-Licensed Architect (COA, India) – Architectural Engineering and Design Studio   *September 2016 – August 2019*

*Designed the following structures as a Professional Architect (TAAD Studio), India : •**Parallax - Residential Building** (May 2018 – Final Phase of Construction), Tumkur, India • **UNI - Institutional Building** (Jan 2017 - Under Construction), Gadag, India • **Transit[ION] - Transit Hub** (March 2017 - Under Construction), Gadag, India • **Forest Bling - Interior Design** (Completed), Bengaluru, India • **Oasis X - Residential Extension** (Completed), Jamshedpur, India.*

AWARDS AND HONORS:

• Was awarded the 'Graduate Student Merit Scholarship' by Carnegie Mellon University.   *March 2019*

PROJECTS:

Data Science: • **Adaptive Concrete Formwork (On-going independent research), Carnegie Mellon University** – Developed a pin-field based formwork apparatus, lined with a flexible membrane that can be manipulated using an industrial robotic arm to cast complex double-curve concrete panels that are modular. Together, the panels can be used to pre-fabricate convoluted concrete shell structures. • **A Regression based Neural Network Model to predict the Compressive Strength of Concrete. (On-going research), Carnegie Mellon University** – Developing a tool using a regression based neural network model to predict the compressive strength of a given concrete sample.

Generative Design + Computational Design: •**Alphabet City (Rule-based modelling), Carnegie Mellon University** - Developed a rule-based-framework using Python in the Grasshopper environment, that autonomously generates city blocks and urban landscapes based on real-world urban-design strategies. In collaboration with Jichen Wang.• **A Responsive Façade for the Hunt Library (Agent-based modelling), Carnegie Mellon University** – Developed an agent-based-framework (built on cellular automaton) using Python in the Grasshopper environment. The algorithm is inspired by the workings of the forest-fire model. In collaboration with Michael Stesney.

Robotics: • **Pick & Place Path Planning, Carnegie Mellon University** - Programmed an ABB IRB 6600 on RobotStudio (RAPID code) to execute a 'Pick and Place' function, simulating the automation of the construction of a brick/block wall. • **Robotic Stereotomy (Hot-wire-cutter + Foam), Carnegie Mellon University** – Programmed an ABB IRB 6600 on HAL Robotics Framework, that visualizes and generates the RAPID code to perform complex robotic stereotomy. A static hot-wire-cutter and foam (gripped by the robotic arm) were used to create modular & convoluted 3D geometry.