

# Karthick Raja B.G

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## Education

Carnegie Mellon University, Pittsburgh  
Anna University, Chennai

Master of Science in Computational Design  
Bachelor of Architecture

May 2026  
July 2021

## Work Experience

### The Madras Office for Architects and Designers, Chennai

Senior Computational Designer, Junior Architect

July 2022 - August 2024

- Led the development of advanced computational plugins for Residential Floor Plan, Toilet Layout, and Open Parking Generation using TensorFlow, seamlessly integrating these solutions with architectural tools such as Rhino to drive automation and efficiency in design processes.
- Supervised a team of interns in data collection and augmentation for GAN models, utilizing datasets sourced from regional firms. Oversaw the manual tracing in Rhino and subsequent processing in Photoshop to enhance the precision of machine learning outputs in architectural applications.
- Developed Python-based plugins incorporating LLM models for translating construction drawings, and streamlining communication between architects and project stakeholders.
- Conceptualized and executed pavilion projects, blending creative design with functional architectural solutions.

### Studio. Compute, Chennai

Founder, Computational Designer

August 2022 - Present

- Developed SPIDER, a comprehensive suite of computational plugins for urban layout generation in Rhino using C#, enhancing efficiency in large-scale spatial planning.
- Engineered C#-based plugins for game layout generation within Rhino, optimizing the creation of interactive and dynamic environments.
- Created Python-based plugins to generate layouts for VR games, elevating the quality of immersive gaming experiences. Designed and developed game characters and environments using Blender and ZBrush, seamlessly integrating creative storytelling with visual design.
- Crafted web interfaces to effectively showcase game projects.
- Built architectural simulation tools using Cinema 4D and Unreal Engine, enhancing design precision and supporting informed decision-making.
- Developed the computational framework for the Tiny Library project, blending innovative concepts with functional space design.

### rad Office, Chennai

Junior Architect, Research Assistant

September 2021 - August 2024

- Developed computational models in Python for urban water cycle simulations, enhancing analysis and supporting informed decision-making in large-scale urban planning.
- Created 3D models and design concepts for the Daycare Center project, emphasizing functionality and user-centered design. Additionally, produced architectural visualizations using Rhino, Vray, and After Effects to effectively communicate design intent.

### Agency 2 Go, Chennai

Plugin developer, Computational designer

August 2021- January 2022

- Developed C#-based computational plugins for office layout generation as part of SMARTPLAN.AI, optimizing workspace design for improved efficiency and adaptability.
- Prepared and curated datasets using Rhino to enhance model accuracy and performance, ensuring optimal results in office layout generation.

## Teaching experience

### Teaching Assistant, Generative Modelling, Carnegie Mellon University, Pittsburgh

Taught methods to develop computational tools and scripting for the design process.

### Mentor, Red Robot Hackathon, RoboClub, Carnegie Mellon University, Pittsburgh

Guided students in designing and building their robotics projects, providing support and expertise to bring their ideas to life.

### Visiting Faculty, School of Architecture and Planning, Chennai

Taught methods for integrating computational tools in architectural design.

## Software Skills

Rhino and Grasshopper, Blender, Z-Brush, Auto-Cad, SketchUp, Cinema 4d, Revit, Photoshop, Illustrator, Indesign, After Effects, Vray, Twinmotion, Unreal engine, Machine learning in Python, C#, Python, JAVA and HTML, GHPython

## Languages

Proficient in the following languages: English, Hindi, Tamil, Telugu

## Awards/Nominations

Tiny Library Competition, Volume Zero

2nd Place, Winner

April 2020