

Colin L.S. Matthews

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Professional Experience

Associate | Senior Computational Design Specialist | BIM Specialist

Ennead Architects | New York, NY | 09/2021 – present

- Developed plugins and scripts for Rhino, Grasshopper, and Revit using Python and C#.
- Coordinated the office's investigation and implementation of AI and machine learning tools for design and marketing; developed custom-trained diffusion models, RAG-enabled chatbots, semantic-search tools, and genetic-algorithm-based design optimization.
- Delivered complex Grasshopper scripts for competitions and projects, working closely with design teams and project architects to identify critical parameters and design intent while improving the technical efficiency and aesthetic potential of the design.
- Established the office's BIM interoperability framework using Rhino.Inside.Revit, Speckle, and custom-developed tools.
- Overhauled and standardized the company's library of environmental analysis Grasshopper scripts to allow designers of any skill level to access environmental analysis for design.
- Promoted company-wide expertise in computational processes through weekly training sessions in Grasshopper, environmental analysis, coding, and AI applications; led the implementation of a tutoring and mentorship program for computational design across all skill levels.

Architectural Designer

Susan T. Rodriguez Architecture & Design | New York, NY | 03/2019 – 09/2021

- Employed computational design methods on multiple projects, including a radially-organized glazing and ceiling scheme for a large public pool and skating facility in Central Park.
- Developed computational tools for the office, including a utility for generating specifications for natural stone based on a reference sample.

Development Projects

Graphop (collaborator)

- Awarded *Most Collaborative Hack* at 2024 AEC Tech Hackathon (Thornton Tomasetti)
- Implements version control and LLM querying over Grasshopper scripts by leveraging a directional graph database; Grasshopper components are deconstructed into data-rich graph nodes.

Corvid (author)

- Grasshopper plugin (.NET) intended to facilitate record-keeping for Rhino documents.
- Access user, license, and Rhino version data; read/write access for document user text. Also exposes the Section/Entry paradigm for user text, which allows for greater flexibility and control.

Tortoise (author)

- Grasshopper plugin (.NET) intended to streamline and simplify the process of facade panelization.
- Leverages custom data types to serialize geometric data and avoid unnecessary rendering of repeated preview geometry.

EnneadTab (collaborator)

- Company plugin ecosystem for Rhino and Revit.
- Tools and utilities for repetitive-task automation, model health maintenance, and interoperability.

Education

Master of Architecture

Columbia GSAPP | New York, NY

Bachelor of Arts (Art History and Visual Arts)

Bowdoin College | Brunswick, ME

Summary

Experienced computational design lead with a strong background in art and architecture and a deep focus on improving design technology through programming. Expert in creatively leveraging advanced computational tools to innovate and optimize design processes.

Certifications (links to documents)

Codecademy (links to syllabi)

- Full-Stack Engineering (in progress)
- [ASP.NET Web Apps](#)
- [Python](#)
- [C#](#)
- [JavaScript, TypeScript, & React](#)
- [HTML & CSS](#)

McNeel

- [Rhino.Inside.Revit](#)
- [GHPython Levels 1 & 2](#)
- [Ladybug Tools](#)

Software Proficiency

- Rhinoceros 3D
 - RhinoCommon
 - RhinoCompute
 - Grasshopper
 - Pollination / Ladybug Tools
 - Visual ARQ
- Revit
 - Revit API
 - Rhino.Inside.Revit / Dynamo
- Autodesk Construction Cloud
- Git / Github / Azure DevOps
- Airtable
- 3ds Max / Blender
- Adobe Creative Suite

Interests

- German language & culture
- Science fiction literature
- DIY electronics
- Sailing