NIMA KARAMI

Software Developer | Creative Programmer | Sports Enthusiast | University of Waterloo
(+1) 437-234-6331 | nkarami.dev@gmail.com | **LinkedIn** | **Online Portfolio** | Toronto, Ontario
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PROFESSIONAL EXPERIENCE

Diamond Schmitt | Generative Designer | 2021-Present

- Utilized an evolutionary algorithm to optimize tower placement and geometry.
- Engineered an automated system to simulate shadow impacts and produce an analysis based on weather data.
- Developed an algorithm to maximize daylight access while minimizing heat loss in high-rise residential buildings.

Court Splash Studio | Director | 2019-Present

- Designed and punctually delivered over 180 projects to international clients over the span of two years.
- Streamlined the workflow with generative scripts and templates.
- Enabled teammates through documentation and periodic reviews.

Functionland | Web Developer | 2021-2022

- Worked closely with the marketing team to wireframe the UI for Functionland's landing page using Figma.
- Managed and coordinated the production materials including photos, videos, and 3D animations using Kanban board.
- Implemented the website as a part of the front-end development team using Svelte.

Freelance | Software Developer | 2015-2021

- Designed and programmed a kinetic shading structure using Python and Grasshopper.
- Analyzed internal forces of a parametric space frame using Python and Karamba.
- Developed a generative program for modeling numerous variations of Muqarnas, an architectural ornamentation with highly complex geometry.
- Programmed a generative simulated color mosaic painting with Python and Grasshopper.

University of Waterloo | Graduate Teaching Assistant | 2020-2021

- Instructed 70+ students both in-person and remotely.
- Examined conceptual development, structural design, building process, and the selection of structural steel and concrete systems.
- Worked on topics such as tension, flexural, and compression members using calculations, design aids, rules of thumb and the latest CSA design standards.

HACKATHONS

Mapna Office Building | 3rd Place
Visualized and rendered a unique multi-storey office building.

Product Design 2 | Honourable Mention
Worked in a group to design, develop, and present the idea in 48 hours.

TECHNICAL SKILLS

Languages: HTML, CSS, Javascript, Python, C++
Tools: Git, Visual Studio, Jupyter, Ardiuno
Front End: React, Bootstrap
Back End: Node.js
Others: Open CV, NumPy, Pandas, Pillow, Matplotlib, MS Office

SOFT SKILLS

Problem Solving
Adaptability
Leadership
Teamwork
Communication
Attention to Detail

DESIGN SKILLS

Graphic Design: Figma, Illustrator, Photoshop, InDesign
3D Visualization: Rhino 3D, Sketchup, Grasshopper, Vray

INTERESTS

Playing Sports
Design
Data Science
Reading
Financial Markets
Learning
Watching Movies

EDUCATION

University of Waterloo | 2020
Faculty of Engineering | MArch

Art University of Isfahan | 2017
BSc Architectural Engineering (Hons)

PROJECTS

Crypto Backtesting Tool | 2020

- Downloaded, cleaned, and stored historical market data using Binance API.
- Built and visualized price-change heat maps for various time frames using numpy, pandas, matplotlib, and seaborn.

Reclaiming Construction Waste: An interface for robotic stacking of irregular components in compression-only structures | 2020

- Implemented machine-vision for a 6-axis collaborative robot using off-the-shelf technologies and OpenCV.
- Developed an on-line 3D bin-packing algorithm for an unsorted set of irregular components.
- Deployed a rigid-body physics simulation to validate the stability of compression-only structures.
- Developed an autonomous system to analyze irregular objects, calculate the best target pose, simulate the solution, and generate a tool path for a collaborative robot.
- Researched +100 academic sources for C&D waste management, material reclamation, and computation & robotics.

Cybrid Serenade | 2019

- Implemented and trained a machine-learning algorithm to detect emotions and facial expressions using computer vision.
- Designed and programmed the behavior for an interactive wall based on human emotions.

Reef: Bio-inspired 3D Printed Ceramic | 2019

- Developed a script to generate complex bio-mimetic 3D geometry through image processing of coral reef textures.
- Worked as a team to design and 3D print the project using clay.

Rhizome | 2018

- Programmed the sound-based lighting behavior using C++ and Arduino.
- Worked as part of a team to design an interactive sound and light installation.

The Urban Visage | 2017

- Spearheaded the design, development, and presentation of an urban installation with 1000 unique pieces.
- Managed a team of 10+ students in order to fabricate and assemble the structure.