

OFER KRISTAL Architect & Computational Design Lead

10+ Years Experience | Parametric Systems • Workflow Architecture • Design to Fabrication

PROFESSIONAL EXPERIENCE

Studio KRISTAL | Founder & Lead Designer | 2019 – Present

- Directing an independent architectural practice and computational consultancy specializing in high-complexity envelopes and infrastructure.
- Developing custom parametric toolsets to bridge the gap between early-stage design intent and automated production.
- Managing multidisciplinary coordination for international clients, ensuring geometric rationalization meets structural and budgetary constraints.

Sou Fujimoto Architects | Lead Computational Designer | 2016 – 2019 | Paris / Tokyo

- Led the development of parametric systems for high-profile urban projects, in multiple design phases.
- Established structured geometry workflows to facilitate real-time coordination between global design teams.
- Translated conceptual complexity into buildable systems through advanced algorithmic modeling and spatial logic.

DESIGN TECHNOLOGY VENTURES

Variaform | Founder & Systems Architect | 2024 – Present

- Conceived and developed a proprietary, rule-based design platform and user-configurable generative system from inception, pioneering a scalable framework for mass-customized parametric furniture.
- Engineered automated fabrication pipelines that translate digital logic into CNC outputs for interlocking plywood furniture, mathematically solving structural joinery tolerances that assemble flawlessly without glue, screws, or hardware fasteners.
- Spearheaded the entire platform vision to democratize high-end design, creating an end-to-end, logic-driven production system that connects consumer configuration directly to industrial manufacturing.

ACADEMIC LEADERSHIP & RESEARCH

Free University of Bozen-Bolzano | Design Professor - Digital Modelling & Fabrication | 2023 – Present | Bolzano, Italy

- Instructing on parametric design and workflow structuring within the Faculty of Design and Art.
- Developed a curriculum that synthesizes computational geometry with physical digital fabrication (DfMA) and industrial production.

WIZO Academy of Design and Education | Architecture Professor - Complex Architectural Structures | 2022 – 2023 | Haifa, Israel

- Defined the pedagogical framework for the intersection of advanced geometry, material systems, and digital workflows.
- Directed technical workshops on translating complex structural forms into rationalized, buildable architectural assemblies.

SELECTED PROJECTS

Mille Arbres (1000 Trees) | Lead Computational Designer w/ Sou Fujimoto | Paris, France

- Managed advanced parametric systems over a 3-year tenure, steering the €550M mixed-use project over the Paris ring road from early competition win through to full building permit submission.
- Engineered a multi-variable platform for rapid design, economic, manufacturing, and regulation iterations - driving volumetric studies, shape optimization, structural distribution, complex facade systems, and undulating accessible slabs.
- Coordinated daily with an extensive multidisciplinary network of facade, structural, and landscape engineers alongside diverse programmatic sector heads; co-developed non-linear pipelines with specialized data consultants to automate model-quality audits and cross-software geometry mapping.

Miller Towers | Lead Computational Designer & Consultant w/ Studio Kristal | Yokneam, Israel

- Authored the complete computational architecture, Rhino/Grasshopper workflows, and parametric surface generation for the undulating facade ribbons enclosing a dual-tower high-rise residential complex.
- Mathematically rationalized 476 unique, wrapping facade ribbon variations into a repeating matrix of just seven fabrication molds; generated comprehensive numeric datasets and automated tables to track mold deployment, part sequencing, and production scheduling.
- Programmed automated workflows for the entire structural metal substation anchoring the ribbons to the concrete frame; managed all fabrication and assembly datasets to guide the precise industrial manufacturing of the custom structural metal components.

The Line (NEOM) | Computational Designer w/ Sou Fujimoto | Saudi Arabia

- Retained as a specialized consultant to engineer the high-complexity conceptual geometry and volumetric massing for a massive vertical urban district (“neighborhood”) within “The Line” framework.
- Developed advanced algorithmic systems to evaluate environmental performance metrics in real-time, executing extensive solar exposure, shading, and micro-climate studies to optimize the overall shape and urban usability of the district.
- Programmed parametric workflows to simultaneously track and calculate complex spatial data, surface area distribution, and programmatic zoning metrics while generating intricate, avant-garde architectural forms.

Blue Marina Bridge | Lead Computational Designer & Consultant w/ Studio Kristal | Ashdod, Israel

- Translated the initial architectural concept into a highly precise, double-curved parametric envelope, resolving complex mathematical surfaces into a buildable and structurally optimized infrastructural form.
- Engineered the outer shell geometry explicitly for production via adaptive moulding technology, allowing 156 double-curved panels to be entirely unique without increasing tooling overhead.
- Algorithmically generated the entire custom structural metal substructure—consisting of hundreds of unique CNC-fabricated brackets anchoring the panels to the primary bridge frame—while managing all downstream numeric data export and manufacturing quality control loops.

Wajer 44 | Computational Consultant w/ Studio Kristal | The Netherlands

- Programmed a custom algorithmic engine to automate the structural detailing of marine sandwich panels; the script dynamically reads any input hull or superstructure surface and instantly converts it into a readily manufacturable internal foam core layout.
- Resolved complex 3D curvature constraints into precise, optimized geometric blocks, establishing a direct pipeline from arbitrary naval surfaces to nested, factory-ready CNC manufacturing datasets.

ARCHITECTURAL PRACTICE & HONORS

• Winner: 40 Under 40 Award (2023) | Community Category, Israel

Awarded for a portfolio of work bridging architectural excellence with social and community-driven spatial innovation.

• Studio KRISTAL. | House for My Parents & Compass House & House of Protective Layers | Private Commissions | Israel

Managed the complete lifecycle of bespoke private villas as a solo practitioner, exercising total creative and technical ownership from conceptual master planning and permitting through to material procurement, prefabricated timber fabrication, and on-site construction finishing.

• TribeLab | Humanitarian Design Lead | Guatemala

Developed low-tech modular systems for displaced communities, blending parametric planning with local craftsmanship.

• Polyform (Copenhagen) & Architettura Attuale (Milano) | Architectural Designer

Engaged in large-scale Scandinavian residential competitions and high-end adaptive reuse projects (2011-2014).

• Education

M.Sc. in Architecture | Aalborg University | Denmark

B.Sc. in Architecture | Politecnico di Milano | Italy

TOOLKIT

Languages

Hebrew (Native) • English, Italian (Full Professional) • French, Spanish, German (Intermediate)

Computational & Parametric Design

- **Rhino / Grasshopper:** Developing complex algorithmic logic for non-standard designs, automate generation, and rationalize constraints.
- **Systems Logic:** Development of bespoke, non-linear workflows for architectural competitions and technical delivery phases.
- **Analysis:** Environmental simulation and structural topology optimization integrated into early-stage design.

BIM & Professional Coordination

- **Interoperability:** Deploying Rhino.Inside.Revit and custom API pipelines to synchronize parametric models within structured BIM environments.
- **Workflow Architecture:** Managing automated multidisciplinary data loops, conflict mitigation, and geometric quality checks.
- **Data Management:** Cataloging, structuring, and exporting massive geometric datasets, numeric schedules, and manufacturing coordinates.

Digital Fabrication & Advanced Manufacturing

- **Design-to-Fabrication (DfMA):** End-to-end workflows translating complex NURBS geometry into CNC-ready production data.
- **Robotic & Adaptive Processes:** Executing geometry for Adaptive Moulding systems to manufacture unique, double-curved composite panels.
- **Industrial Fabrication:** Programming automated nesting and machining toolpaths for CNC fabrication across timber, steel, and sheet materials.
- **Advanced Materials:** Technical experience with Composite Material Injection and specialized molding for high-performance elements.

Visualization & Narrative

- **High-Fidelity Rendering:** V-Ray, Enscape, Vizcom.
- **Visual Communication:** Adobe Creative Suite (InDesign, Photoshop, Illustrator, Premiere Pro).
- **Technical Storytelling:** Advanced 3D modeling and diagramming for high-stakes competition entries and client presentations.