

EMORY KRALL

Philadelphia
215-205-6342
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SUMMARY

Design Engineer and Industrial Designer with ~20 years of experience in custom fabrication, furniture, exhibits, lighting, and experiential environments. Expert in translating conceptual designs into buildable, parametric 3D models, production drawings, and CNC-ready files. Known for improving design-to-fabrication workflows by creating SolidWorks automation tools, building parametrically linked cut-list systems, and establishing documentation standards that reduced errors and accelerated CNC prep. Hands-on experience with metal, wood, and mixed-material fabrication, with a strong track record of maintaining design intent while resolving technical and manufacturing constraints.

CORE SKILLS

- 3D CAD & Parametric Modeling: **SolidWorks (expert)**, OnShape, Fusion 360, Rhino (working knowledge), Grasshopper (basic)
- Design Engineering for Fabrication: detailing, assemblies, hardware, tolerances, fasteners
- Documentation: fabrication/assembly drawings, cut lists, BOMs, client approval sets
- CNC & Digital Fabrication: CNC routing, laser cutting, 3D printing, STL prep
- Workflow & Automation: SolidWorks VBA macros, parametric cut lists, drawing standards
- Cross-Functional Collaboration: design, fabrication, technology, project management, vendors
- Project Types: custom furniture, architectural elements, museum exhibits, brand activations, mobile tours
- Tools: Smartsheet, Google Workspace, Photoshop, Illustrator, Mastercam (basic), Opticutter

EXPERIENCE

Aardvark Studios (via acquisition of FKB)

Director of Design Engineering Jan 2023 – Dec 2025

**Promoted from Design Engineer (Nov 2020 – Jan 2023)*

Custom fabrication and experiential design studio producing museum exhibits, brand activations, retail environments, sculptural elements, and mobile tours.

Director of Design Engineering – Jan 2023 – Dec 2025

- Led a Design Engineering team of **2–5** engineers, overseeing modeling, documentation standards, and release processes.
- Worked between design, fabrication, technology, and project management to turn conceptual designs into fully engineered, buildable solutions.
- Built complete **parametric SolidWorks models** for complex assemblies and environments; produced fabrication drawings, client-approval sets, CNC and laser-cutting files, BOMs, and material take-offs.
- Created and maintained parametric cut-list workflows linking part names, quantities, and materials directly to the model, ensuring updates remained accurate as designs evolved.
- Developed a suite of **SolidWorks macros (VBA)** that automated repetitive tasks and allowed CNC-ready geometry to be output in minutes instead of hours/days, significantly reducing errors and rework.
- Reviewed and redlined engineering packages prior to release, ensuring clarity for the shop and fidelity to the original design intent.

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- Supported estimating with preliminary engineering, material take-offs, and labor-hour input for complex custom builds.
- Provided hands-on assistance to fabrication when needed, including laser cutting, 3D printing, and problem-solving on the shop floor.

Notable Project

- Engineered **large 14' interactive tree sculptures** for a children's museum, integrating welded steel substructures, CNC-cut plywood armatures, folded MCM composite skins, touchscreens, speakers, NFC sensors, and custom 3D-printed character components with embedded LCD displays.

Design Engineer – FKB – Nov 2020 – Jan 2023

- Translated conceptual designs into detailed, parametric SolidWorks models for museum exhibits, retail pop-ups, brand activations, and sculptural elements.
- Produced fabrication drawings, CNC-ready files, assembly diagrams, BOMs, and installation documentation.
- Coordinated daily with design, fabrication, and tech teams.
- Prepared 3D and 2D content for CNC routing, laser cutting, and 3D printing.

Milder Furniture

Senior Designer / Project Manager

2015 – 2020

Design studio focused on modular furniture systems for education and workplace environments (clients included Parsons School of Design, MICA, Tulane University, NYU, Kikkerland).

- Managed up to **20 simultaneous design-build projects**, including multi-year contracts ranging from ~\$2K to \$500K.
- Produced 3D models, renderings, shop drawings, CNC-ready files, assembly instructions, and installation diagrams for custom furniture and interiors.
- Tracked materials, hardware, and inventory with Excel/Google Sheets, Gantt charts, and Kanban systems.
- Conducted site surveys, field measurements, and managed installations in collaboration with architects, interior designers, furniture dealers, and contractors.
- Designed custom hardware components in injection-molded plastic, formed sheet metal, and machined aluminum, expanding the standard product library.
- Led the studio's transition from 2D drafting to **3D parametric modeling (OnShape)**; worked with the software's development team and wrote **FeatureScript** tools to automate repetitive modeling tasks.

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Universal Display Corporation (UDC) **OLED Prototype Designer** *2008 – 2015*

R&D company licensing OLED technology to major manufacturers in consumer electronics and lighting.

- Designed and built functional prototypes exploring new applications for OLED lighting and displays.
- Developed concepts via sketching, CAD, rapid prototyping, and works-like models with strong emphasis on manufacturability.
- Collaborated with scientists, engineers, and marketers to advance new OLED fabrication processes.
- **Inventor on 20+ granted U.S. patents** related to OLED fabrication methods, flexible lighting devices, and display architectures.
- Acted as liaison to external designers and manufacturers; designed and managed a corporate showroom and trade show booths.
- Authored and illustrated patent disclosures and performed studio photography for documentation and marketing.

Emory Krall Design **Principal** *2002 – Present (select projects)*

- Designed products, packaging, and graphics for hard and soft goods, web, and print.
- Clients included Oro Design (Mile High Kit) and CDI International (travel mugs and water bottles).

Current Designs, Inc. **Industrial / Graphic Designer** *2005 – 2008*

- Designed and engineered MRI-safe input devices for neuroscientific fMRI research.
- Produced components in-house using CNC milling/turning and low-volume molding.
- Developed visual identity and marketing materials.

Josh Owen LLC **Designer / Studio Manager** *2000 – 2005*

- Managed day-to-day studio operations, including ideation, prototyping, CAD, design control drawings, and client communication.
- Supported projects for manufacturers such as Areaware, Casamania, Kikkerland, and Umbra.
- Supervised interns and coordinated project timelines and deliverables.

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Amuneal Shophand (Metal Fabrication) *2000 – 2001*

- Worked in a metal shop producing boutique retail furniture and architectural elements.
- Created control drawings and cut sheets; assisted with fabrication, assembly, and finishing.
- Gained foundational experience with custom metal fabrication that informs current design engineering work.

University of Pennsylvania – Integrated Product Design (IPD) **Lecturer, Contemporary Product Design** *2011 – 2012*

- Taught a studio and lecture course for two years on contemporary product design, part of the Integrated Product Design (IPD) masters program.
- Guided students through a semester-long design process, from initial ideation to the production of a final prototype.

The University of the Arts **Lecturer, Industrial Design (3D Modeling & Rapid Prototyping)** *2005 – 2008*

- Taught a single class for three years to third-year students in the Industrial Design program, focusing on 3D solid modeling and rapid prototyping fundamentals.

EDUCATION

Bachelor of Science, Industrial Design
Philadelphia University (now Jefferson University), 2002

SELECTED PATENTS & PUBLICATIONS

- **Patents:** Inventor on 20+ U.S. patents for OLED devices, lighting systems, flexible displays, and product designs (full list available upon request).
- **Publications:** Work and projects featured in *Wired UK*, *Frame*, *Real Simple*, *Print*, *Graphis Product Design*, *How*, *ReadyMade*, and others.