

Hisham Zeidan

Computational Designer and Web Developer

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Profile

I am a versatile professional bridging the worlds of web development and computational design. My journey began with a Bachelor's in Information Technology and Computing, laying a solid foundation in software development. Driven by a fascination with the intersection of digital and physical realms, I pursued a Master's in Computational Design and Digital Fabrication, expanding my skillset into the innovative field of digital manufacturing.

Education

- 2023 - **University of Nicosia, Cyprus** | UNIC Architecture Research Center (ARC), Department of Architecture
2024 **in collaboration with the University of Innsbruck, Austria**
MSc Computational Design and Digital Fabrication (CDDF)
- 2016 **SE-Factory, Lebanon** | Full Stack Web Development Boot Camp
- 2008- **Arab Open University, Lebanon** | Computer Science &
2012 Engineering
BSc Information Technology and Computing
- 2010 **Mira Training Center, Lebanon** | Architect (Accad-3dMax) Certificate
- 2007 **Mira Training Center, Lebanon** | Graphic Design Certificate

Education-related Projects

Metahedra | <https://blog.mainframeproduction.net/metahedra/>

Metahedra was created as part of my Master's in Computational Design & Digital Fabrication. This MSc program explores the intersection between computational methods & architectural design. Students gain skills in computational design as well as hands-on experience with cutting-edge fabrication technologies, cultivating analytical & creative problem-solving abilities. We investigate how digital tools can enhance design processes and enable new forms of construction. Through experimentation at this nexus of computation, design-thinking and making, the program fosters innovation. Metahedra applied these learnings to generate and fabricate geometric structures.

We designed & fabricated an arc-shaped structure using a generative design method, with recycled cardboard as a base material for our prototype. We designed flat 2D components that we cut using Laser engraving & manually folded into 3D shapes that we combined & assembled into a larger model. We completed the entire process, from concept, to analysis, design, fabrication & assembly. Technologies used: Grasshopper, Rhino, AutoCAD

RexLab Steinziegel | <https://blog.mainframeproduction.net/rexlab-steinziegel/>

REX | LAB is a space for realizing ideas, with robotic actuators as tools and CAD programs and code as the language. Going from idea to tangible object is a form of translation and interpretation. With robotics and software these processes are flexible and subject to exploration. As a medium they both claim universality. Six-axis industrial robots are universal manipulators. Code is universal expression of everything calculatable (turing-complete). This paired with their novel nature leaves much to be found, discovered and realized.

I designed for and operated a custom-printing robotic arm. We completed the entire process, from concept, to analysis, design, fabrication & assembly. Our product was a hanging veranda mounted on a shipping container as an artistic rather than functional piece. I learned how to transform a 3D model into a machine readable form.

Technologies used: Grasshopper, Rhino

Joints: Advanced Joinery Catalog (MSc Thesis) | <https://joints.mainframeproduction.net/>

Joints is a web application developed as the cornerstone of a Master's thesis in Computational Design and Digital Fabrication. This innovative platform serves as a comprehensive online catalog and interactive resource for various joint types used in architecture, furniture design and digital fabrication.

This web application serves as a valuable resource for students, researchers, and professionals in the fields of architecture and design and contributes to the broader discourse on computational design and digital fabrication methodologies. By bridging traditional craftsmanship with contemporary digital tools, Joints represents a significant step forward in the democratization of advanced joinery knowledge and techniques.

Technologies used: Laravel, tailwind CSS, Jquery, Three.js

Key Features:

1. **Extensive Joint Library:** Browse through a diverse collection of joint types, from traditional woodworking connections to cutting-edge parametric designs.
2. **Advanced Filtering System:** Easily narrow down joint options based on multiple criteria such as fabrication method, and complexity.
3. **Detailed Joint Information:** Access in-depth specifications, historical context, and best practices for each joint type.
4. **3D Model Viewer:** Interact with high-quality, manipulable 3D models of each joint for a thorough understanding of its geometry and assembly.
5. **Parametric Script Downloads:** Download customizable scripts (e.g., Grasshopper, Python) to generate parametric versions of selected joints, facilitating integration into digital design workflows.
6. **Content Management System (CMS):** An admin interface allowing for easy addition, modification, and management of joint entries, ensuring the catalog remains up-to-date with the latest developments in joinery techniques.
7. **Responsive Design:** Fully optimized for both desktop and mobile devices, ensuring accessibility across various platforms.

9. **API Integration:** Potential for integration with CAD software and digital fabrication tools for seamless workflow incorporation.

Professional Experience

2015 - present	<p>Main Frame Production Independent Web and Fabrication Solutions Developer</p> <p>Providing services covering web development, 3d design, 3d printing, digital fabrication and Internet of Things (IOT)</p> <p>Key Projects:</p> <ul style="list-style-type: none">• <u>Company portfolio website</u> <p>Main Frame Production https://mainframeproduction.net/</p> <p>Technologies used: Laravel</p> <ul style="list-style-type: none">• <u>General Directorate of Cooperatives CMS</u> المديرية العامة للتعاونيات http://cms.gdcoops.gov.lb/ <p>Falls under a Canada-funded project "Support to women cooperatives and associations in the agro-food sector of Lebanon in collaboration with the Ministry of Agriculture" implemented by FAO</p> <p>The project aims at supporting women cooperatives, associations and informal groups to develop and implement business in the agro-food sector. Women groups were provided with an extensive training relevant to gender equality and women empowerment, cooperatives, business, marketing, communication, ethics & others. They were enrolled in Cooperative Business Schools and coached by a group of trained facilitators to prepare business plans. 150 business plans are being provided with cash grants to be used for businesses' implementation. The project is also supporting the General Directorate of Cooperatives in upgrading its Content Information System.</p> <p>The developed the web application facilitates the completion of tasks, including data entry, monitoring and follow-up of COOP documentation and status & report generation. The application provides a management system to integrate data from existing COOP files at the Directorate General. This integration will allow efficient tracking and monitoring of collected data.</p> <p>Technologies used:</p> <p>SP.net Core, C#, HTML, CSS, JQuery, Windows Server</p> <ul style="list-style-type: none">• <u>Bchoufk</u> https://www.bchoufk.com/ <p>Migrated Data and UI with custom theme development from drupal 7 to WordPress</p> <p>Technologies used: Drupal, WordPress, CSS</p> <ul style="list-style-type: none">• <u>Virtual Creative Technologies (VCT)</u> https://vct-me.com/ <p>Virtual Creative Technologies (VCT) is a technology development company</p>
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for hardware and software solutions to optimize occupational safety and productivity procedures & workflows.

Technologies used: WordPress, CSS

- [Tech Blog | https://blog.mainframeproduction.net/](https://blog.mainframeproduction.net/)

Software & Tech Development news

2019 -
2020

The Saffron Souk | Full Stack Developer

Saffron Souk Marketplace Migration and Enhancement |

<https://saffronsouk.com/>

Key Tasks:

- Migrating and enhancing Saffron Souk marketplace from Woocommerce to CS-Cart, implementing significant improvements to functionality, user experience and performance

Key Objectives:

1. Platform Migration:

- Seamlessly transfer product data, user accounts & order history from WooCommerce to CS-Cart
- Ensure zero data loss and maintain SEO rankings during the transition

2. Enhanced Marketplace Features:

- Implement a robust multi-vendor system allowing individual sellers to manage their stores
- Develop an advanced commission structure with flexible options for different product categories
- Create a streamlined onboarding process for new vendors

3. User Experience Improvements:

- Design an intuitive, mobile-responsive interface adhering to modern UX/UI principles
- Implement an advanced search & filtering system for easier product discovery
- Develop personalized product recommendations based on user browsing & purchase history

4. Performance Optimization:

- Implement caching mechanisms and CDN integration for faster page load times
- Optimize database queries and server-side processes for improved scalability
- Ensure the platform can handle high traffic volumes during peak seasons

5. Payment and Shipping Integration:

- Integrate region-specific payment gateways to cater to a global customer base
- Implement a flexible shipping module with options for local and international delivery

6. Analytics and Reporting:

- Develop a comprehensive dashboard for administrators and vendors
- Implement advanced analytics tools for tracking sales, user behavior, and marketplace growth

7. Localization and Internationalization:

- Enable multi-language support for a global audience

- Implement region-specific pricing and tax calculations

8. Marketing and SEO Tools:

- Integrate email marketing capabilities for customer retention
- Implement SEO-friendly URL structures and metadata management
- Develop social media integration for improved product sharing and visibility

9. Training and Documentation:

- Provide comprehensive training for administrators & vendors on new CS-Cart system
- Develop detailed documentation for ongoing maintenance & future enhancements

10. Post-Migration Support:

- Offer dedicated support during the initial launch phase
- Implement a system for gathering user feedback for continuous improvement

This migration and enhancement project aimed to transform Saffron Souk into a state-of-the-art e-commerce marketplace, leveraging CS-Cart's robust features while incorporating custom solutions to meet the specific needs of the saffron and spice market.

2016 - 2019	Kamkalima Web Application Developer – Full Stack Kamkalima (https://kamkalima.com/) is an Arabic educational platform for learning & teaching in schools. It empowers Arabic classrooms with the needed tools, resources, and support to raise a generation of students armed with 21 st century skills and inspire teachers to do what they do best, teach. Key Tasks: <ul style="list-style-type: none"> • Working with a team of developers to build the WebApp from scratch Technologies: Laravel, Blade, MySql, JQuery, VueJS, CSS, Sass, AWS
2013 - present	Freelance Photography & Videography Photographer, Videographer, Editor Key Tasks: <ul style="list-style-type: none"> • Shooting: Capture photographs and videos for events, portraits, products, or other subjects as clients require • Editing: Process & enhance raw images & edit footage into the final product • Client Management: Communicate with clients to understand their needs, plan shoots and deliver final products
2013 - 2016	Art Stone Montana Production Manager Multifaceted role allowed me to develop a comprehensive understanding of the manufacturing ecosystem & hone my skills in project management, design processes, problem-solving & strategic decision-making

Key Tasks:

- Workforce Management: Oversaw a team of skilled workers, ensuring effective coordination and productivity throughout the production process
- End-to-End Process Ownership: Managed the complete product lifecycle - from initial design and engineering, to production, customer support and final implementation
- CNC Machine Operation: Operated and maintained advanced CNC (Computer Numerical Control) machines to fabricate high-precision marble components as per design specifications
- Designed and oversaw mosaic mural fabrication; Designed and implemented marble facades
- Quality Assurance: Implemented rigorous quality control measures to minimize defects and deliver products that consistently met or exceeded customer expectations
- Continuous Improvement: Identified bottlenecks and optimization opportunities within the production workflow, and spearheaded initiatives to streamline operations and enhance efficiency

Technology used: WordPress

2013 -
2013

MBT-Solutions | Web Developer

Key Tasks:

- In-house web maintenance
- Creating a web-based user guide for "Crocodii" ERP software solution

2010 -
2013

Mosarte Mosaici | Manager, Graphic Designer

Key Tasks:

- Managed the employees and the whole production process
- Designed custom client orders for interior and exterior decorations

2011 -
2012

Blink Below the Line - Beirut | CNC Router Operator

Key Tasks:

- Design and fabricate a range of items, mainly product display shelves

2010 -
2011

Lastra Printing Press | Graphic Designer

Key Tasks:

- Graphic design
- Printing operations (Derst UV Printer)

Skills

Programming

- HTML5, CSS, Bootstrap
- Responsive web: Proficient
- JavaScript, jQuery: Proficient
- VueJs: Competent
- ReactJs : Novice
- Smarty template: Novice
- PHP: Competent
- Laravel: Competent
- C #: Competent
- Linux Shell Scripting: Competent
- Wordpress: Competent
- WooCommerce: Competent
- Python: Novice
- TypeScript: Novice
- Drupal: Novice
- CS Cart: Competent
- Asp.net: Competent
- Object-Oriented Programming (OOP): Competent
- Three.js: Novice

Design

- Adobe Photoshop: Proficient
- Adobe Illustrator: Competent
- Adobe Premiere: Competent
- Rhino: Competent
- Grasshopper for Rhino: Competent
- AutoCAD: Competent
- Art Cam: Competent
- 3D Modeling: Competent
- Photography: Proficient
- Videography & Video Editing: Competent
- Blender: Novice
- Computer-Aided Design (CAD): Competent
- ArtCam: Competent
- Product Design & Development: Competent

Machinery

- 3D printers
- Laser Engravers
- CNC Machines
- Digital Fabrication
- Robotic Fabrication
- TIG Welding

Hosting & Cloud-Architecture

- AWS: Competent
- Devops: Competent
- C Panel: Competent
- Windows Server: Competent

Database

- MySQL: Competent
- NoSQL Database: Novice
- Data Migration: Competent

Version Control

- Git: Competent
- C Panel

Project Management

- Team Management
- System Architecture: Competent
- Requirement gathering and documentation
- Microsoft Project

OS

- Ubuntu: Competent

Other Skills & Hobbies

- Woodworking
 - Welding
 - Masonry
 - Tiling
 - Electrical & Electronics Circuitry
 - Landscaping and gardening
 - DIY
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