

# STEPHANIE BACHIR

Architect/ Computational Designer



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Multi-faceted architect with over a decade of experience in academia, industry, and scientific research. Specializing in parametric design and optimization, with a strong focus on shell structures, biomimicry, and digital fabrication. Committed to sustainable design, humanitarian philosophy, and community-driven projects.

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## MEMBERSHIPS

Member at the **Lebanese Order of Engineers and Architects** since 2009

Former Member at **Public Interest Design Levant** (2014 - 2015), A Multidisciplinary NGO operating at the intersection of design thinking and entrepreneurship.

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## SKILLS

**2D/3D MODELING**  
AutoCAD, Rhino

**PARAMETRIC MODELING**  
Rhino Grasshopper and Plug-ins  
(Kangaroo, Karamba)

**DIGITAL FABRICATION**  
Laser Cutting, CNC Milling, 3D Printing,  
Vacuum Forming

**PRESENTATION & PUBLIC SPEAKING**  
Photoshop, Illustrator, InDesign, PP

**FASHION**  
Pattern Drafting

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## LANGUAGES

**ENGLISH** Fluent written and spoken  
**ARABIC** Native speaker  
**FRENCH** Good command  
**SPANISH** Basic  
**German** Basic

## RESEARCH

**2022-Pres.** **RESEARCHER, Alfred Wegener Institute for Polar and Marine Research [AWI]**  
Bremerhaven, Bremen, Germany  
Bionic Lightweight Design and Functional Morphology RG  
Research focus: *Diatom-inspired Lightweight Structures*

**06-08 2025** **VISITING SCHOLAR, University of Pennsylvania [UPenn]**  
Philadelphia, Pennsylvania, United States  
Polyhedral Structures Lab, Stuart Weitzman School of Design

**2024-Pres.** **DOCTORAL STUDENT, Aalto University**  
Helsinki, Finland  
Design of Structures RG - Advisor: Prof. Toni Kotnik  
Best Flash Talk (*AWI PhD Days*, May 2024)

## EDUCATION

**2013-2014** **MAA01, Institute for Advanced Architecture of Cataluña [IAAC-UPC]**  
Barcelona, Spain  
Thesis: *Chromatic Skins: A Parametrically-generated Passive Responsive Façade System using Photochromic Materials*  
Weighted Average: 8.6, Master Project completed with ***Distinction***

**2004-2009** **BARCH, American University of Beirut [AUB]**  
Beirut, Lebanon  
Thesis: *Urban Synapse: City as Living Organism*  
GPA: 3.49, ***Dean's List*** for 3 semesters

**1990-2004** **LEBANESE BACCALAUREATE, International College [IC]**  
Beirut, Lebanon  
Graduated with ***Distinction***

## TEACHING

**2015-2024** **PART-TIME FACULTY, Lebanese American University [LAU]**  
Beirut & Byblos, Lebanon  
Introduced parametric modeling/ digital fabrication techniques and promoted a hands-on approach to form-finding as means to understanding structural forms  
Courses Taught: *Technical Graphics III, Design Studio III, Building Technology IV, Summer workshop on AI-aided design (July 2024)*

**2016-2022** **SENIOR LECTURER, Phoenicia University [PU]**  
Daoudiyeh, Lebanon  
Acted as co-founding member at the College of Architecture and Design, playing a pivotal role in developing Year II academic program  
Courses taught: *Design Studios III & IV, Technical Drawing, 3D Modeling, Building Technology, Regional Surveying and Thesis advising*

**2018** **PROGRAM COORDINATOR, IaaC Global Summer School Beirut 2018, BAU**  
2-14 Jul 2018 | FADBE, Beirut Arab University, Debbieh, Lebanon  
Developed local brief, handled organization, logistics, tooling sessions  
Research focus: *Robotic fabrication*

**2017** **PROGRAM ORGANIZER, IaaC Global Summer School Beirut 2017, AUB**  
3-16 Jul 2017 | ArD AUB, Beirut, Lebanon  
Developed local brief, handled organization, logistics, tooling sessions  
Research focus: *Form-finding and Shell Structures*

**2016** **VISITING LECTURER/ TUTOR, IaaC Global Summer School Beirut 2016, AUB**  
4-17 Jul 2016 | ArD AUB, Beirut, Lebanon  
Delivered lectures/digital tooling sessions, provided feedback  
Research focus: *Interactive Design and Real-time data*

**2018** **GUEST LECTURER, Lebanese University [LU]**  
Dec 2018 | Faculté des Beaux-Arts et d' Architecture, Beirut, Lebanon  
Delivered lectures/digital tooling sessions for ***M3 904 Séminaire Topic Biomimicry and the Production of Shell Structures (lecture + design reviews)***

## DIGITAL FABRICATION

### 2015-2019 Co-founding Member | Beirut Makers

An open collective leading the Makers movement in Lebanon, conceiving speculative design objects using digital fabrication, exhibiting twice a year.

### 2016 Designer in Residence | La Condition Publique

29 Nov. - 4 Dec. | Roubaix, France

Project: *Computational Couture*, an experimental project exploring the body as a medium for parametric second skins

### 2014 Project Team Member | Endesa World Fab Condenser, Fab 10

Jul. | Barcelona, Spain

Responsibilities: Design of interior and managing fabrication and assembly

### 2014 Builder | Thin Tile Vault | MAP 13 ETH Zurich BLOCK Research Group

5-27 May | Valldaura, Collserola Park, Spain

Construction of a Catalan vault generated with RhinoVAULT

### 2014 Participant | Membranes & Bending Active Elements Workshop | CITA RDA

3-10 Mar | Copenhagen, Denmark

Hybrid structural systems combining active-bending with tensile membranes

## PROFESSIONAL

### 2021-2022 COMPUTATIONAL DESIGN CONSULTANT, AREX Consultants

Remote/ Dubai, United Arab Emirates

Scope: Parametric design and façade studies

- Souq Al Thulatha, Baghdad, Iraq
- AUIB (American University of Iraq in Baghdad), Baghdad, Iraq
- Al-Dura Masterplan, Baghdad, Iraq
- Arjan Residential Tower (Competition), Dubai, UAE

### 2021 SENIOR ARCHITECT, SOMA Architects

Jul 2021 - Sept 2021 (3 mnths) | Beirut, Lebanon

Scope: Project-based design consultancy

- Parametric design and scripting for "AVA" tower in Dubai
- Plan layouts from a 3D parametric model, integrating engineering inputs
- Prepared design submission packages for Nakheel

### 2018-2019 SENIOR ARCHITECT, theOtherDada [tOD]

Jun 2018 - Jul 2019 (13 mnths) | Beirut Central District, Lebanon

Scope: Design consultancy

- Parametric design and environmental analysis for small-scale structures
- Concept-to-execution documentation for a guest house complex in Thour

### 2014-2016 JUNIOR DESIGN MANAGER, EMAAR

Oct 2014 - Oct 2016 (2 yrs) | Beit Misk, Metn, Lebanon

Scope: Design consultancy and management

- Reviewed design packages and evaluated consultant proposals
- Masterplan revisions and architectural design for residential sectors
- Designed townhouses, public gardens, and feasibility studies for new sectors

### 2009-2013 ARCHITECT, Atelier des Architectes Associés [AAA]

Sep 2009 – Jul 2013 (3 yrs 10 mnths) | Beirut, Lebanon

- Developed architectural packages (concept to execution) for various building types

• Managed legal permits, client meetings, and engineering coordination

Key projects include Beirut Gate (with ARQUITECTONICA Miami), Badaro Gardens (Badaro), Annexio: Les Résidences de l'Albergo (Ashrafieh), Soeur des Saints Coeurs (Sioufi), and EauOne (Clemenceau)

### 2008 ARCHITECTURAL INTERN, Kohn Pederson Fox International [KPF]

Aug - Sep 2008 | London, UK

- Created sectional and unfolded drawings for Dubai Metro's Canal City line

## TALKS

### 2024 | Presenter, AWI Science Week | AWI BH

Title: *Diatoms: Architects of the Sea*

### 2024 | Presenting Author, IASS 2024 | ETH

Zurich, Zurich, Switzerland

Title: *The Case of Asterolampra (WG 15 Structural Morphology)*

### 2019 | Panelist, Exponential Technology

Middle East Conference | Le Grey, Beirut

Panel: Additive Manufacturing

### 2017 | Speaker, IaaC Alumni Meeting 2 | BCN

Advanced Design Methodologies in Academia-Lebanon: Limitations/Opportunities

### 2016 | Guest Lecturer, Product Design

workshop with Paul Mouawad (AGENDA) |

Beirut Symposium Center, Beirut

Product Design in the Age of Digital Fabrication

## PUBLICATIONS

### 2024 | IASS Conference Proceedings

*Diatom-inspired Computational Strategies for Radial Framework Structures: the Case of Asterolampra*

### 2020 | ISSUU e-book

*Biomimetic Concepts for Temporary Structures (Design Studio outcome)*

### 2015 | MATERIABILITY

Featured Project: *Chromatic Skins* (MAA Thesis)

## PRESS

### 2024.06.14 | NORDSEE ZEITUNG

Wenn Meeresorganismen Vorbild für einen Garten in Bremerhaven sind

### 2018.06.05 | ZETTELER

The crème de la crème of Lebanese design

### 2017.08.19 | L'ORIENT LE JOUR

A LAUB: la GSS: un atelier international pour un impact local

### 2017 | SAYIDATI DECOR no. 38

ستيفاني شير و التصميم الرقمي لمستقبل مبشر  
Interview

### 2016 | AISHTI MAGAZINE no. 86

Brave New Design | Interview with Beirut Makers

## AWARDS

### 2024 | NordWest Award: BEA Project (AWI)

Category: Sustainability

## CERTIFICATIONS

### 2020 | Entrepreneurship in Emerging Economies | Harvard

(6-week Online Course)

### 2018 | PATTERN DRAFTING | ESMOD USJ

Nov 2017-May 2018 | Beirut, Lebanon

A 6-month night course on making flat 2D patterns that when sewn together create a fit