

# STEPHANIE BACHIR

Architect/ Computational Designer



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Arndtstraße 16, 27570 BH, Germany

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 MAAOI, 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 Thoum
- 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 L'AUB: la GSS: un atelier international pour un impact local
- 2017 | SAYIDATI DECOR no. 38

ستيفاني بشير والتصميم 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