JOANNA SABAK

COMPUTATIONAL DESIGNER
& CREATIVE TECHNOLOGIST

CONTACT

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LINKEDIN
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BASED IN
London, UK

SKILLS

TOOL DEVELOPMENT
Python · C# / .NET (in training) · JavaScript · React · HTML / CSS · Rhino.Compute · Rhino.Inside · GitHub · Figma

EXPLORING AI
LiDAR segmentation · Semantic extraction · 3D chat agents

AEC & COMPUTATIONAL DESIGN
Rhino · Grasshopper · Rhino–Revit interoperability · Parametric geometry · Fabrication

SIMULATION
LadyBug Tools · Simscale · Ansys

OTHER
Adobe Creative Suite · 3D printing

PROFILE

Computational designer with 9 years of industry experience in geometry processing, simulation-driven design and custom tool development. Experienced in leading internal plug-in development from scoping to studio-wide deployment, including prototyping AI-driven tools. Currently training in C# / .NET and full-stack development to build production-ready tooling that enables design teams.

PROFESSIONAL EXPERIENCE

HEATHERWICK STUDIO
London · Jan 2022 – now

Senior Computational Designer

- Initiated and led development of internal plug-ins (Climate Analysis Tools, BIM integration in Rhino), owning the full lifecycle from ideation and scoping through prototyping to production-ready deployment and integration into studio workflows.
- Built custom tools and scripts (Python, Grasshopper, Rhino.Compute) for geometry processing, environmental analysis and data-driven design decisions across ~45 projects.
- Lead Computational Environmental Design since 2023: simulation-driven workflows integrating daylight, solar and wind performance into early-stage design.
- Provided technical training and support across the studio in parametric design, environmental simulation and internally developed tools.
- Contribute to R&D on form generation, material behaviour and emerging technologies, including AR/VR and web-based tools.
- Develop and maintain computational workflows for complex geometry generation, rationalisation and fabrication, from concept design to construction-stage detailing.

GRIMSHAW
London · Mar 2021 – Dec 2021

Computational Design Specialist

- Designed computational workflows and complex geometry with an emphasis on structures, on projects including Eden Project North (Morecambe), Bristol Arena, ExCeL offices (London) and Oxford Botanical Gardens.
- Trained architects in Grasshopper and Rhino and provided extensive Rhino–Revit interoperability support.

ATELIER ONE
London · Mar 2019 – Mar 2021

Computational Architect

- Developed computational tools for structural engineers to work smoothly with complex geometry at every scale, from art installations and pavilions to gridshell roofs, ship hulls, staging and theatres, including projects in unconventional materials such as bamboo and hemp.

EARLIER EXPERIENCE
2015 – 2019

- **Teaching Assistant, Lund University** (2017–19): tutorials in Grasshopper, Rhino, 3D printing and computational design.
- **Intern Architect, Wallgren Arkitekter, Malmö** (2015–16): design development, 3D modelling and visualisation.
- **3D Design for 3D Printing, 3YOURMIND, Berlin** (2015): worked with software and engineering teams in a startup to test and refine geometry workflows and internal tools.

EDUCATION

Full-stack C# .NET Bootcamp
The Tech Academy
C#, .NET, HTML, CSS, JavaScript, React, Databases
2026 · completing Dec 2026

M.Arch, Lund University
Spatial Experiments (Computational Design in Extreme Environments)
2016 – 2018

B.Eng. Architecture
West Pomeranian University of Technology, Szczecin
2011 – 2015
incl. Erasmus, Gazi University, 2013–14

MIT edX
Sustainable Building Design
May - Jun 2024

University of Southern Denmark
Summer school: Experimental Constructions with Large Scale 3D Printing
Aug 2018

LANGUAGES

Polish	native
English	full professional
German	basic
Swedish	basic

INTERESTS

rock climbing · mountaineering · neuroscience

SELECTED TOOLS & AI PROTOTYPES

Built collaborating in multidisciplinary teams to take an idea to a working prototype.

S.I.M.O.N. AECTech NY · Nov 2025
Spatially Intelligent Model for Object Networks: chat to your LiDAR scan. AI segmentation of 3D scans with semantic extraction, object tagging and a 3D chat agent that suggests replacements for detected objects in real time.

View on GitHub

Data Muncher AECTech London · Mar 2026 · Honourable mention
Live, geometry-linked data visualisation inside Rhino using modern web libraries.

View on GitHub

Earth to Rhino AECTech NY · Oct 2024
A Grasshopper plug-in bridging Cesium, a 3D geospatial platform, and Rhino for easy integration of geospatial data into design models.

View on GitHub

TALKS & PUBLICATIONS

2025 **Ybl International Conference on the Built Environment:** speaker, *Advanced Workflows in Computational Analysis for Complex Architectural Projects.*

2025 **SCOSA, AI and the Future of Architectural Education in the UK:** co-author, *Human-Centered AI in Design.*

2023 **aec+tech:** talk, *Technology Implementation Stories.*

— **Material Computation Research (Lund University):** co-author, *Using the potential of emergent 3D printing in dynamic architecture.*

EXHIBITIONS

2019 Festival of Architecture, Form/Design Center, Malmö: Exhibition of the top 5 master thesis projects of 2018 in Sweden.

2018 3D Printing @ Lund University: Full-scale 3D-printed chair, team project with Elin Daun.