



## PROFILE

Researcher and Architect with core interest in the development of computational methods for the architectural design. As a practitioner, I always look for enhancing creativity and efficiency of the design process. This includes pushing the limits of design strategies by exploration of new digital methods and adapting their potential to create architecture which is creative but also informed and efficient. My professional and academic experiences, including competition awards, provides a solid foundation for continued design practice thru experimentation with new design methodologies and tools.

## EXPERIENCE

**2022 – ongoing      Designbotic – Computational Architect + Software Developer      Warsaw, Poland**

### Responsibilities:

- Senior full-stack developer of AEC software
- Specialist in developing algorithms for early-stage generative design systems
- Developing solutions based on Machine Learning, Genetic Algorithms, and Graph Theory
- Development of custom tools for architects using C# (Revit API, Rhino API)
- Transferring business needs and use-cases to products
- Closely working with users on developing tools, taking their needs for considerations
- Consulting architectural teams on computational design strategies for active projects
- Introduction and scaling of parametric modeling workflows within design teams
- Concept design supported by advanced computational design methods
- Creation of project-specific computational and automation workflows

### Key Products:

#### kolega.space – Feasibility Study Application for Residential Buildings

- Member of the core development team
- Development of algorithmic methods for generating and optimization of building layouts and massing
- Research and development of machine learning methods for generating urban-context-aware buildings
- UI development in WPF with migration to React
- Development of a 3D Viewer in WPF and migration to Three.js
- Design of salable application based on modular service-oriented architecture
- Reusable code-base for Standalone, Revit and Grasshopper versions

#### FloorplanToolkit – Machine Learning Tool for Floorplan Generation

- R&D on algorithmic and ML-based floorplan generation methods
- Design of a standardized data format for floorplan definitions and database storage
- Development of an MVP for automated floorplan fitting and validation
- Design and deployment of cloud computing infrastructure on Azure

#### DesignboticTools – Revit Add-in for Architects

- Development of a Revit add-in providing productivity and analysis tools
- Sunlight analysis based on a custom computational library
- Terrain import tool supporting ESRI Grid formats
- Volumetric analysis tools for rapid massing and area assessment in Revit

#### Custom Revit Add-on Framework

- Development of a modular add-on framework with a dynamic loader
- Asynchronous task management within Revit
- Responsive auto-update mechanisms reacting to model changes
- Modern architecture separating from Revit SDK, service based

#### Selected Project

- Polish National Museum, Warsaw – architectural competition, 10,000 sq m
- Computer Science Faculty in Szczecin, Poland – Mention

**2019 – 2022      ZAAZ - Computational Architect and Bim Automation Specialist      Gdynia, Poland**

### Responsibilities:

- Collaboration with B2B clients: our established architectural practices and AEC software company
- Cross-office standardization of computational design and BIM workflows
- Development of custom parametric feasibility and early-stage design systems for residential and public projects
- Development of custom tools for Revit and Rhino (C#)
- Design and deployment of BIM automation frameworks
- Computational support across concept, competition, and technical design stage
- Team training and on-boarding in new tools, workflows, and standards

### Key Clients:

#### VIATechnik (AEC Software / Engineering) – Boston/Chicago

- Feasibility study platform for Chick-fil-A using Rhino Compute and Angular
- Revit Addon's development
- Supporting organization-wide Revit adoption in Target corporation by development of custom add on framework.

#### Rolfe Judd Architects – London

- BIM workflow audit and strategic recommendations
- Creating BIM model for a multifamily residential complex in London

#### ArchDeco Architects – Gdynia

- BIM management for residential, medical, and hotel projects
- Office BIM standards update and implementation
- Introduction of parametric and automated workflows

#### BJK Architekci – Gdynia

- Development of custom Revit and Dynamo tools (C#)
- Custom computational workflows for facade modeling and model quality assurance using Rhino.Inside Revit and Dynamo

#### BLOK Architekci – Kraków

- Research consultant, EU Horizon 2020 "Prelude" Project

#### Selected projects:

- Hotel in Krynica Morska (Archdeco) – competition, 40 000 sq m
- School in Białoleśka (Archdeco) – competition, 7000 sq m
- BaseCamp Gdańsk (Archdeco) – heritage building remodeling – 20000 sq m
- Orpea Gdańsk (Archdeco) – heritage building remodeling – 15000 sq m
- BaseCamp Sopot (Archdeco) – students apartments – 22000 sq m
- Wendy Multifamily complex in Gdynia (BJK) – building permit, 42 000 sq m

## CONTACT

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YouTube

## SKILLS:

### Programming:

C++, C#, Python, Type Script

### UI Frameworks:

WPF, React

### SDKs:

Archicad, RhinoCommon, Grasshopper, Revit

### Machine Learning libraries:

Tensorflow, Torch, Semantic Kernel,

### Visual Programming:

Grasshopper, Dynamo

### Version Control:

GitHub, BitBucket, SourceTree

### IDE:

Visual Studio, VS Code, Cursor

### BIM Modeling:

Archicad 9 – 25, Revit 2018-26

### BIM Management:

Tekla BimSight, Solibri Model Checker

### Environmental Analysis:

LadyBug and HoneyBee - Daysim i Radiance

### FEM Analysis:

Karamba

### Operating Robotic Arm:

KUKA Prc

### Physical simulations:

Kangaroo, Kangaroo 2, Processing

### Visualizations:

Vray 3dS Max i Rhino, Twinmotion, ArchiCad, Octane, UnReal

### 2D Post-processing and animations:

Adobe Creative Suit

### 3d Printers:

Zprinter, Reprap, Zmorph

### CNC Machines:

Laser, Cutter, Vinyl Cutter

### Languages:

English – fluent, scientific  
German – basics;  
Polski – fluent

### Certificates and Licenses:

Development agreement with Graphisoft  
BIM Manager Certificate – Graphisoft  
License Archicad 25 POL full  
Rhino 7 license

**2014 – 2019 PZ Studio – Research Architect and Bim Manager Szczecin, Poland**

**Responsibilities:**

- Creating workflows with parametric tools (GH)
- Development of workflows increasing efficiency of the team
- Taring the team about introduced solutions
- Managing 5 person team
- Development of new tools for Archicad 22 and Grasshopper
- BIM Management of projects
- Introduction of open BIM in ACE team
- Technical coordination with ACE team.

**Selected Projects:**

- Custom Tools for Archicad 22 (C++).
- Custom Tools for Grasshopper (C#).
- Workflow for UE4 (Archicad / Blender(Python) / UE4).
- Office Infrastructure upgrade.
- Maritim Hotel in Szczecin, floor area 96 000 sq m
- Remodeling of heritage villa to hotel, floor area 7000 sq m
- Residential complex "Mała Błonia" stage 3 - 6 buildings

**2011 - 2013 E2Architektura - Freelancer/Consulting Szczecin, Poland**

**Responsibilities:**

- Client relations management
- Coordination with various architectural teams and offices
- Consulting in parametric design and digital fabrication
- EU grants proposal consulting in scope of building construction for educational facilities

**Selected Projects:**

- Stargard Station: Competition for Commute Center - mention in competition
- Nowy Targ - Competition work for plaza in central part of Wrocław
- BOEM Headquarters - Design of 2000 sq m office building for metal factory
- Single Family Housing: Several projects of single, medium-size homes
- Design and consulting of apartments, restaurants and offices interiors

**2010 - 2013 W+Architekci- Architect Assistant (Part I) Szczecin, Poland**

**Responsibilities:**

- Specialized in early stage design competitions
- Responsible for developing competition works from concept to submission
- Rapid prototyping and maintaining (ZCorp ZPrinter 850)

**Selected Projects:**

- "Wiśniowy-Sad" apartment complex; realization; 1<sup>st</sup> prize competition
- Giedroycia: Concept design for office and residential building; 3000 sq m
- Maloposka: Competition project for Sports Hall in Szczecin; 1500 sq m; mention
- Tczew - Design for old Museum of Old Ships - 3rd prize in competition
- Philharmony: Competition for music venue in Szczecin
- Hotel in Przecław - Design of hotel with conference center, area 12000 sq m

**03 - 09.2009 Magma Architecture – Intern Berlin, Germany**

**Responsibilities:**

- Detailing designs
- Preparing presentation content
- Model making

**Selected Projects:**

- Al Qasba - Design for master plan of cultural center in Dubai
- Galangberg House - Duplex in south Germany
- WSQ - Detail design of restaurant pavilion

**06 – 10.2006 H2L2 Architects & Planners - Intern Philadelphia, USA**

**Responsibilities:**

- Conducting feasibility studies
- Preparing design preparation
- Model making

**Selected Projects:**

- Ningbo, China: Competition for district government headquarters; 25000 sq m
- Corozal Monument: Monument for US soldiers cemetery in Panama
- Moravian College: Dormitory; two 1500 sq m buildings

**EDUCATION**

**2025 – ongoing PHD Student Szczecin, Poland**

West Pomeranian University of Technology in Szczecin  
PHD student conducting research in Machine Learning in Architecture  
**Research grant awarded by the Ministry of Science and Higher Education**

**2014 - 2017 Researcher / Teacher Assistant Szczecin, Poland**

West Pomeranian University of Technology in Szczecin  
Research in computational design; focus on genetic algorithms applications in architecture  
Teaching: Recreational Facilities Design; Parametric Design Laboratories

**2010 – 2012 Master's Degree in Architecture and Urban Design Szczecin, Poland**

Western Pomeranian University of Technology in Szczecin  
Thesis: "Center of Audiovisual Arts" (tutor Jarosław Bondar)  
**Project awarded in 3 competitions for best diploma in 2012**

**2007 - 2008 Erasmus exchange student on "Via University" Horsens, Denmark**

Course "Constructing Architect"

**2004 - 2008 Bachelor (Engineer) degree in Architecture and Urban Design Szczecin, Poland**

West Pomeranian University of Technology in Szczecin

**AWARDS AND PUBLICATION**

04.2023	Computer Science Faculty in Szczecin	Mention in open competition
01.2015	Museum of Warsaw Courtyard Roofing	Mention in open competition
01.2014	Integrated Communication Center in Stargard, Poland	Mention in open competition
04.2013	Association of Polish Architects (SAPR) Competition "Diploma of the Year 2012"	Honorable Mention for architectural diploma
02.2013	President of City Szczecin Competition for the Best Diploma in 2012	Mention for architectural diploma
01.2013	Western Pomeranian Architects Chamber "Best Diploma of 2012"	Mention for architectural diploma
01.2011	"Wiśniowy-Sad" apartment complex; 4000 sq m; realized;	1 <sup>st</sup> Prize in closed competition
11.2010	Sport Center on Małopolska Street in Szczecin, Poland	Mention in open competition
05.2008	"Old Ships Conservatory Workshop" in Tczew, Poland	3 <sup>rd</sup> Prize in open competition
08.2006	Project of Public Square in Trzebiatów, Poland	1 <sup>st</sup> Prize in open competition

## PUBLICATIONS

2016	"Genetic Algorithms for Geometry Optimization"	Poster presentation on Conference Advances in Architectural Geometry Conference ETH Zurich 2016
2016	"Genetic Algorithms for facade Geometry Optimization"	Poster presentation on Conference Advance Building Skins Berno 2016
2016	"Application of the Genetic Algorithm for a Geometry Rationalization of a Load-bearing Structure for Free-Form Roof."	Publication in science journal „Procedia Engineering"
2014	Article about Calatrava building - "Polytechnic in Florida"	Magazine Archivolta
2013	Presentation of Diploma "Dyplom Roku 2012" - Architektura-Murator	Magazine Architektura-Murator
2013	Presentation of Diploma "Diploma Roku 2012"	Magazine ARCH/SARP

## PROFESSIONAL DEVELOPMENT

10.2025	AEC Tech Symposium, New York, USA Workshops: "Transforming Text: Practical NLP for the AEC Industry" Hackathon: <b>Best Collaborative Hack Award for "Graph-Hop"</b>	Tutor: Sajedi Seyedomid (Thornton Tomasetti)
04.2025	AEC Tech Barcelona Symposium, Barcelona, Spain Workshops: "Grasshopper on the Web" Hackathon: <b>Best Overall Hack Award for "C"</b>	Tutor: Justyna Szychowska (KPF) Sophie Moor (Core Studio TT)
09.2022	Conference: Design Modeling Symposium, UDK Berlin Workshop: 'Drawing Plans with Machine Learning' – usage of AI in Architecture	Tutor: Jeroen van Lith (PlanFinder)
11.2022	AEC Tech Symposium Masterclass: "Revit API", New York, USA	Tutor: Konrad Sobon (Bad Monekys)
09.2019	Symposium: AIAFF - "AI Aided Architectural Fabrication", TU Cottbus Germany	
09.2018	Conference: Advances in Architectural Geometry, Goeteborg Sweeden Workshop: "Form-active structures with Kangaroo/K2 Engineering"	Tutors: Daniel Piker (Foster and Partners), Cecilie Brandt (BIG), Emil Poulsen (Thornton Tomasetti)
02.2018	Certificate: BIM Manager Grahpisoft – one of the first 10 people in Poland	Tutors: Katalin Borszėki (Graphisoft) Tamás Erős (Graphisoft)
03.2017	Workshop: Machine Learning "Generative Design and Robotic rod bending", Paris France	Tutor: Maria Śmigieliska (ETH Zurich)
09.2016	Conference: Advances in Architectural Geometry ETH Zurich, Switzerland Workshop: "Free-form develop able surfaces"	Tutor: Bhooshan Shajay (ZAHA Hadid Arch)
04.2016	Workshop: Smart Geometry Hybrid Domains "MARS" cluster, Goteborg Sweden.	Tutors: Josef Musil (Foster and Partners)
12.2015	Workshop: Machine Learning Experiments – Parametric Support, Berlin Germany	Tutor: Mateusz Zwierzycki (CITA)
12.2015	Workshop: Research MEETUP 2015 and LAB 'Additive Topologies' – fabrication with KUKA robot	Tutor: Stuart Maggs (mini-builders, IAAC)
11.2015	Course: "Design Thinking" model in Business Project Management	Tutors: LUCE - Lund University, Szwecja
09.2015	Conference: Design Modeling Symposium, CITA Copenhagen Denmark Workshop: 'Multi-objective optimization in Parametric Design' – usage of Genetic Algorithms in Architecture	Tutors: Clemens Preisinger (Karamba 3d) Robert Vierlinger(Bollinger-Grohmann Ing)
05.2015	Workshop: "Mood for Wood" workshops design structures out of wood, Poznan Poland	Tutor: Aron Losoncz, (Hello Wood, LiTraCon)
07.2015	Workshop: Rapid Prototyping Workshops with CNC in Piła, Poland	Tutors: A.Kreźlnik, K. Radziszewski
03.2015	Conference: Shape of Logic, Wrocław Poland Workshop: Structural optimization - 'Minimax Structures'	Tutor: Robert Vierlinger(Bollinger-Grohmann Ing)
11.2014	Course: Grasshopper Class Anemone/Starling for Grasshopper, Poznan Poland	Tutor: Mateusz Zwierzycki (CITA)
11.2014	Course: Zmorph 3d Printing Academy, Wrocław Poland	Tutor: Przemysław Jaworski (UCL Bartlett)