



## Personal Data

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Date of Birth:  
25 October 1986

Place of Birth  
Aachen, Germany

## Academic Studies/ School

since September 2015: **Master of Advanced Studies (MAS) in Architecture and Digital Fabrication,**  
Eidgenössische Technische Hochschule Zürich (ETHZ)

-Thesis: Autonomous 3D Printing of Spatially Extruded Structures through Machine Learning: Application to Structures Printed in 2.5D

2010-2014: **Master of Science in Architecture (four semesters),**  
Bergische Universität Wuppertal (BUW), Architecture

-Design: 4D. Mobile Museum Prototypes  
-Thesis: Machining Architecture: The Tectonics of 3D-Printing  
-Grade: 1.5  
-Talk at the architectural congress architectureworld 2015 in Münster with the title: 4D. Mobile Museum Prototypes: Temporäre Materialien für temporäre Architektur

2007-2010: **Bachelor of Science in Architecture (six semesters),**  
Bergische Universität Wuppertal, Architecture

-Design: Urbanatix\_The School  
-Grade: 1.5  
-1.Price Development of the city center of Wuppertal Sonnborn (2010)

2006-2007: **Commercial College for high-school graduates,**  
Friedrich-List-Berufskolleg, Solingen

-Grade: 1.1

1997-2006: **Abitur / A-Levels (Advanced Courses: English and Mathematics),**  
Gymnasium Schwertstraße (Grammar school), Solingen

-Grade: 2.4

## Work Experience/ Internships

2014-2015: **(Interior) Architect**  
LANG – SHOP & OBJEKT GmbH, Dortmund:

-Design and execution planning for gastronomy and retail design  
-Structural design (extension/ reconstruction of existing buildings)  
-Visualisations

2012-2013: **Architect (Computation Specialist)**  
New-Territories (R&Sie(n) / [elf/bat/c]) in Bangkok:

-Development of parametric models for projects and installations of different sizes  
-Concept & schematic design  
-Set decorator for the short movie „Although (in) Hapnea“  
-Teaching collaboration (Computation) with the FabLab at Thammasat University of Architecture and Planning, Bangkok, Thailand

2009-2013: **Personal Assistant, working int the field of CSD (Computational Structure Design)**  
of Prof. Karl Schwalbenhofer, Professorship of Structural Engineering and Building Construction at BUW, Wuppertal:

-Programming of a particle-spring-system for form-finding and analysis of constructions  
-Programming of a simulation and steering software for a CNC-Multitool for wirecutting (5 degrees of freedom)  
-Collaboration with students, tutor for Processing

2012: **Research Assistant for the project sinesurf**  
Professorship of Rendering Techniques and Design (DME) with Prof. Holger Hoffmann at BUW, Wuppertal:

-Research about the fabrication of complex geometries with a CNC-Multitool for wirecutting (5 degrees of freedom)  
-Development of a digital tool

2009: **Student Assistant / tutor in the computer lab**  
at BUW:

-Large scale printing, help with programmms (3DSMax, Adobe, SCIA)

2008: **Intern at a building site**  
Company Perlongo und Bologna GbR, Solingen

2002-2009: **Kitchen help**  
Retirement home St. Josef Haus, Solingen

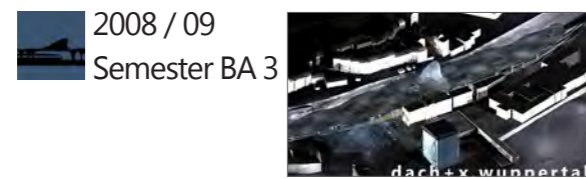
## Additional Skills / Interests

**Computer Skills:** Rhinoceros, 3ds Max Design, AutoCad, Python, Processing, Maxscript, Grasshopper, G-Code, UR Script, KRL Script, RobotStudio, V-Ray, Adobe Creative Suite, MS Office

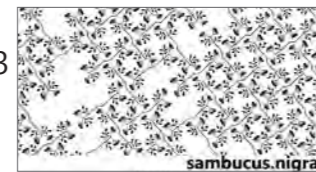
**Language Skills:** German: Native language  
English: Proficient (bilingual German-English branch)  
French: Fluent  
Thai: Basic  
Spanish: Basic

**Personal Interests:** sports (soccer, volleyball, jogging, sailboarding), painting/ drawing, reading, cooking, travelling, photography, social commitment

## My Projects



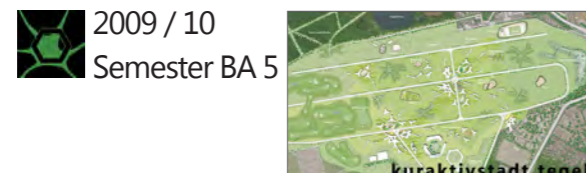
2008 / 09  
Semester BA 3



2008 / 09  
Semester BA 3



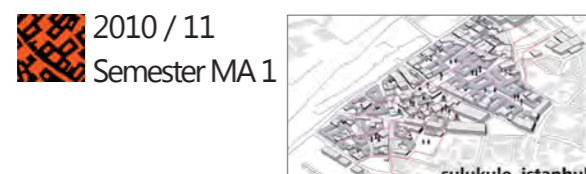
2009  
Semester BA 4



2009 / 10  
Semester BA 5



2010  
Semester BA 6



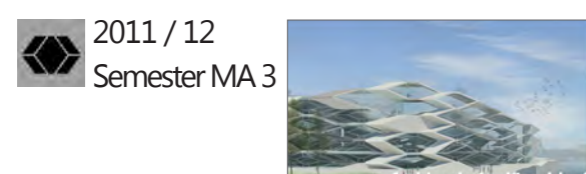
2010 / 11  
Semester MA 1



2010 / 11  
Sem. BA / MA



2011  
Semester MA 2



2011 / 12  
Semester MA 3

## Their influence on my development

The constructive design of a roofing for the main train station in Wuppertal was my first programming experience starting with the generation of curves in Excel and a completely mathematical definition of geometry in Maxscript (3dsMax).

Dealing with the topic of big city plants I developed my artistic capabilities from sketches of elder to the graphic interpretation of its fruits as a future city to the construction and performance of an inhabitable sculpture.

During this design I learned about typologies and I was creatively transforming a library to a ferry terminal while keeping the same building shape.

In collaboration with several architecture students as well as a civil engineering student I learned to design in urban scale and how to develop an utilization concept and a feasibility study.

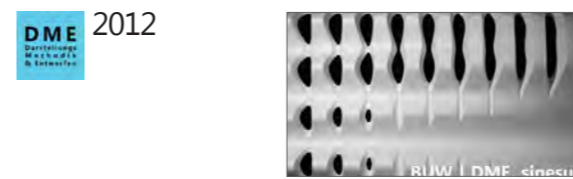
This design focussed on a pragmatic approach to architecture and was including the existing building of a church.

Reorganizing a quarter in Istanbul I was engaged with the topic of sustainability in the sense of refurbishing existing properties using ecological (recycling) materials and by giving a strong focus on keeping the cultural identity of the neighborhood.

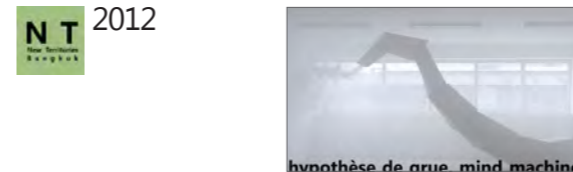
In different subjects as well as while I was working at the chair for CSD I was pursuing my interest in programming and doing research in that field. I also shared my knowledge by teaching students of the next generation.

Starting from the critical examination of today's food production I evolved another parametric design which I was programming in Processing and transferring to Rhino by writing my own dxf export.

Here I was exploring geometries of spatial tessellation and I examined how to manipulate them in order to create architectural functionality.



2012



2012



2012 / 13



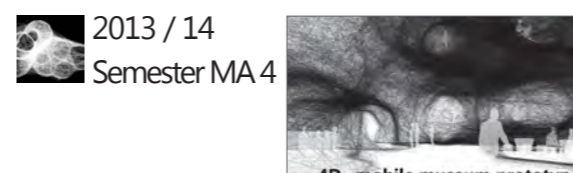
2012 / 13



2013



2013



2013 / 14  
Semester MA 4



2015 / 16  
Semester MAS



2016  
Semester MAS

In this research project I was doing the step from digital to physical by programming a design tool in Grasshopper and generating a G-Code for the fabrication with a CNC-Multi-tool with hotwire cutting.

This installation is my first project in practice where I could also apply my knowledge of geometry and programming. I was actively engaged in the whole project development to fabrication and also learned about decisions due to financial limitations.

I was part of the conception and production of a (low budget) short movie and experienced how to teach (Python, GH) and conduct students to develop a project.

From experimental model making I was participating in evolving the design of a swimming pool for which I was later doing the execution drawings.

During this voluntary project of doing an exhibition design I made the experience of how creative potential is released from being without any financial means.

The design of an art museum in Bangkok was my first cooperation on a large-scale project. I learned a lot about and participated in the negotiation process between client, architect and engineer, also encountering the challenge of collaborating with people unfamiliar with parametric design.

For my final master design it was important to me to propose a holistic vision for the life cycle of a temporary architecture which is incorporating the use of robotic fabrication and the conception of a new material that is biodegradable and extrudable. In that scope I was examining the programming of a swarm behaviour with structural capabilities (Processing).

One of my main drives is the question of the interdependency between digital / parametric design and physical model. Thus the programming of a Kuka robot (with 6 degrees of freedom and an external axis) to fabricate a prototype of a minimal housing unit, was an important step for me.

In this project I am closing the loop from digital to physical, back to the digital. I am especially interested in this feedback and the concept of machine learning in architecture which can help to solve problems without completely understanding them e.g. it is possible to increase the accuracy of spatial polymer extrusion without analysing the material properties.