

EDUCATION

- 2022_23 **ETH Zürich | Zürich, Switzerland**
Master of Advanced Studies in Architecture and Digital Fabrication
- 2021 **YAC Academy | Bologna, Italy**
Architecture for Landscape
High-Level Training Course that focused on landscape and biom
- 2016_21 **Istanbul Technical University | Istanbul, Turkey**
Bachelor of Architecture
- 2011_16 **Academician Zarifa Aliyeva Lyceum | Baku, Azerbaijan**
High School

EXPERIENCE

- 2024
[07-...] **Design++ & PCBM, ETH Zurich | Zürich, Switzerland**
Research Assistant
- Operations of Immersive Design Lab (IDL) / Co-Lead Operations
 - Developing demos for realtime audiovisual experiences focuses on Ambisonics and Digital Twin
 - Supporting for organization of semester based visiting lectures called "Seminar Series"
 - Developing Xr Application for Lausanne Cathedral called "La Cathedral Immersive"
 - Supporting "Bridge Design Competition" course for multidevice (mobile and Xr headset) platform for presentation
- 2023_24
[11-07] **Design++, ETH Zurich | Zürich, Switzerland**
Scientific Assistant
- Developing demos for showcasing lab capabilities on realtime tracking and Audio simulations
 - Developing platform for architecture student for fast realtime visual and sound simulation for early design stage
 - Supporting for organization of semester based visiting lectures called "Seminar Series"
- 2023_24
[11-07] **Digital Building Technologies (DBT), ETH Zurich | Zürich, Switzerland**
Scientific Assistant
- Developing robotic fabrication and computational design aspect of BioPrinting
 - Documenting and laser scanning concrete printing of Tor Alva tower and analyzing deviations of prints compared to digital model
- 2023
[03-09] **Design++, ETH Zurich | Zürich, Switzerland**
Student Assistant
- Supporting for organization of semester based visiting lectures called "Seminar Series"
- 2023
[06-07] **Gramazio Kohler Research (GKR), ETH Zurich | Zürich, Switzerland**
Student Assistant
- Supporting on fabrication of Impact Printing
- 2022
[06-07] **BIG - Bjarke Ingels Group | Remote**
Architect
- Collaboration with Bjarke Ingels Group for Cesare Roversi
- 2020
[01-03] **Istanbul Technical University (ITU) | Istanbul, Turkey**
Research Assistant
- Working with Assoc.Prof. Aslıhan Şenel for architectural competition
- 2019
[08-09] **Istanbul Technical University (ITU) | Istanbul, Turkey**
Research Assistant
- Working with Prof. Dr. Ayşe Şentürer for "future visions" series
- 2019
[06-08] **Salon Alper Derinbogaz | Istanbul, Turkey**
Architectural Assistant (Design Internship)
- Working on Istanbul City museum and supporting "Space Graph" exhibition
- 2018
[07-08] **Salon Alper Derinbogaz | Istanbul, Turkey**
Architectural Assistant (Construction Internship)
- Working on Istanbul City museum

Nijat Mahamaliyev

Architect, Researcher

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References

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Prof. Dr. Benjamin Dillenburger
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Prof. Matthias Kohler
kohler@arch.ethz.ch

Andrea Ling
ling@arch.ethz.ch

PUBLICATIONS

2026
[Pending...]

"Ornanet: cGan-Based Ornament Predictions for 3D Concrete Printing."

Authors: P. Jaeggi*, C. Lin*, N. Mahamaliyev, M. Bernhard, A. Anton, B. Dillenburger

2026
[Pending...]

"AI-powered Conservation Co-pilots for Built Heritage and its Applied Climatology."

Publication: *The Future of Construction Symposium 2026*

Authors: Camilla Tennenini*, Yamini Patankar*, Rafael Bischof, Nijat Mahamaliyev, Robert J. Flatt

2024
[09]

"Heritage ++, a Spatial Computing approach to Heritage Conservation."

Publication: *International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM)*

Authors: Y. Patankar*, C. Tennenini, R. Bischof, I. Khatri, R. Avelino, W. Yang, N. Mahamaliyev, F. Scotto, D. Mitterberger, B. Bickel, F. Girardet, C. Amsler, B. Bomou, R. Flatt

2024
[07]

"Digital Fabrication of Biologically Cemented Spatial Structures."

Publication: *3D Printing and Additive Manufacturing*
<https://doi.org/10.1089/3dp.2023.0339>

Authors: K. Antorveza* A.Ling*, N. Mahamaliyev* G. Bauer, and B. Dillenburger

TEACHING

2024
[03]

Immersive Realities – Seminar week | Zürich, Switzerland

IDL Design++, ETH Zurich

The course taught with Dr. Achilleas Xydis and Prof. Dr. Daniela Mitterberger

- "Crafting virtual experiences using an interplay of audiovisual elements"
- This intense workshop explores the art of immersive design, teaching students to craft engaging virtual spaces through acoustic simulation, game engine design, and visual elements, complemented by excursions and lectures from industry experts.

2024
[06-09]

Multi-criteria design & optimization of living photosynthetic bio-cementation processes | Zürich, Switzerland

Master of Advanced Studies (MAS), Architecture and Digital Fabrication, ETH Zürich

Master thesis supervised with Andrea Ling, Prof. Kam-Ming Mark Tam and Jerry Yo-Cheng Lee

- This thesis explores integrating photosynthetic cyanobacteria into 3D-printed architectural components, using a design framework to optimize geometry for carbon sequestration, bio-cementation, structural integrity, and fabrication efficiency.

2024
[06-09]

Ornanet: cGan-Based Ornament Predictions for 3D Concrete Printing | Zürich, Switzerland

Master of Advanced Studies (MAS), Architecture and Digital Fabrication, ETH Zürich

Master thesis supervised with Ana Anton, CheWei Lin and Mathias Bernhard

- This thesis develops "OrnaNet," a machine learning-based framework to enhance ornament prediction in 3D Concrete Printing (3DCP), enabling accurate simulations, real-time decision-making, and improved design efficiency for complex geometries, advancing the field of architectural fabrication.

2024
[10-12]

Bridge Design | Zürich, Switzerland

Master Civil Engineering (D-BAUG), Institute of Structural Engineering, ETH Zürich

Technical support for masters course regarding to the multidevice (mobile and Xr headsets) visualization and presentation taught by Prof. Dr. Walter Kaufmann, Dr. Andreas Müller.

- This course provides a comprehensive overview of bridge design, focusing on structural behavior, material suitability, dimensioning, and construction methods for various bridge typologies.

WORKSHOPS

2023

Cyber-Physical Agent-Based Models for Swarm Construction

ICD Stuttgart | Samuel Leder, Tobias Schwinn, Lasath Siriwardena, Mathias Maierhofer

2023

Paraply School

Royal Danish Academy (KADK) | MacIver-Ek Chevroulet

2021

YAC Architecture for Landscape

Francesca Singer / SANAA

2020

Acadia Workshop 09

Prof. Martyn Dade-Robertson, Carolina Ramirez Figueroa

2019

BETONART Architecture Summer School

Jorge Mealha

2019

AA Istanbul Visiting School

Elif Erdine, Milad Showkatbakhsh

2019

Computer Vision: Deep Learning

Ahmet Alp Kindiroğlu

Nijat Mahamaliyev

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AWARDS & COMPETITIONS

2021
[07]**[1st Prize]**

Commemorating Epidemics and Health Workers Competition
National professional competition by Istanbul Metropolitan Municipality

with Birge Yıldırım Okta, Gürkan Okta, Nasibe Nur Dünder, Burak Arifoğlu, Doç. Dr. Nilüfer Demirsoy, Dr. Hülya Öztürk, Uzm. Dr. Selahattin Erhan, Banu Ekiz, Batuhan Engin, Aslı Omağ, Mehmet Gören,

2020
[08]**[1st Prize, Regional]**

International VELUX Award for Students of Architecture 2020

with Alperen Temur, Ezgi Uzunucu and Nasibe Nur Dünder

2020
[03]**[Acquisition prize]**

Erenköy Mental and Neurological Diseases Training and Research Hospital,
Architectural Project Competition

with Aslıhan Şenel, Bihter Almaç, Buse Özçelik, Ekin Eryılmaz, Gamze Kaya, Ece Duran, Taylan Karabaş, Nida Ekenel, Nida Bilgen, Umut Almaç, Semiha Altıntaş, İrem Korkmaz, Cemil Çalkıcı, Seçil Yatan, Tildem Kırtak, Eda Ünerden, Merve Yıldırım, Metehan Gürsu

2020
[03]**[5th Prize, Freestyle category]**

Next Top Metaverse Build Competition International professional competition by Renovi

with Alperen Temur, Ezgi Uzunucu and Nasibe Nur Dünder

2016_2021

[Deans List]

Recognized on the Dean's List for academic achievements throughout my Bachelor of
Architecture program at Istanbul Technical University.

2016_17 Fall - Honor List
2016_17 Spring - Honor List
2018_19 Spring - Honor List
2019_20 Spring - Honor List
2020_21 Spring - High Honor List

EXHIBITIONS

2025/26
[09- _]**Picoplanktonics 2.0 | Budapest, Hungary**

Project selected to represent a Canadian pavilion.
Member of the team, in charge of robotic fabrication

-https://lam.xyz/wp-content/uploads/2025/10/QUBIT_ENGlec_B.pdf

2025
[05-11]**Biennale Architettura 2025 (Picoplanktonics) | Venice, Italy**

Project selected to represent a Canadian pavilion.
Member of the team, in charge of robotic fabrication

-<https://arch.ethz.ch/en/news-und-veranstaltungen/news-kanal/2024/05/doctoral-fellow-andrea-shin-ling-leads-collective-to-represent-canada-at-the-biennale-di-venezia-2025.html>

2024
[05-06]**Prötóplasto - an ultra lightweight plastic media installation | Switzerland**

Member of the team for design and fabrication of exhibition

-<https://dbt.arch.ethz.ch/project/protoplasto/>

2022
[05-06]**Future Visions: Yeni Kent ve Yeni Mimarlık: NYC, İstanbul, Moskova, Atina ve İzmir | Karaköy, İstanbul.**

Member of the team for design and fabrication of exhibition materials

-<https://bi-ozet.com/2022/05/12/gelecek-vizyonlari-yeni-kent-ve-yeni-mimarlik-sergisi-14-mayista-kursunlu-handa-aciliyor/>

SKILLS/TOOLS & INTERESTS

Interests

Robotic[] Fabrication, Creative/Visual Coding, Scripting, Analog/Digital Photography
Model making, Digital Fabrication (laser cutting, 3D Printing. . .),
Reality capture (3D laser scanning, photogrammetry), interactive and multisensory
design.v

3D Modeling

Rhinoceros I Grasshopper I Vray I Cinema 4D I TouchDesigner I Houdini

Visualization

Adobe Suites [Ps, Ai, Lr, Id, Pr, Ae] I Affinity Designer

Coding

Phyton I C# I Processing I P5.js I Arduino C/C++

Fabrication

CNC I 3D Printing I Robotic Fabrication I Custom Tool making. . .

Languages

Azerbaijani **[Native]** I Turkish **[Proficient]** I English **[Advanced]** I
Russian **[Intermediate]**

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