

Algorithms in Planning 2026

Proceedings

TU Wien

Institute of Architectural Sciences
Research Unit of Digital Architecture and Planning

3 June 2026

Vienna

Edited By

Gabriel Wurzer
Wolfgang E. Lorenz

© 2026 Enkeljetë Ademi, Utku Arslan, Veronica Chencheva, Francesca Iaconis, Mohamad mahdi Kazemi, Bircan Kömürçü, Elisabeth Korff, Wolfgang E. Lorenz, Bükre Öksüz, Aikhomu Evans Onokevbagbe, Diego Pando, Mariia Pykhacheva, Jinsan Ryu, Ermira Sejdiu, Rineta Sinani, Anna Stalzer, Esmeralda Torres Perez, Gabriel Wurzer, Asli Yilmaz

Cover Design

Gabriel Wurzer and Wolfgang E. Lorenz

Cover images generated with the cellular automata NetLogo model "city.6" developed by Gabriel Wurzer and described in: Wurzer, G., & Lorenz, W. E. (2018). "Options for obtaining a 'Gründerzeit' flat – A wet dream explored by means of a Cellular Automata model." In A. Kepczynska-Walczak & S. Bialkowski (Eds.), *Computing for a Better Tomorrow – Proceedings of the 36th eCAADe Conference*, pp. 639–646. Implemented using NetLogo (Wilensky, U., 1999).

Editors

Gabriel Wurzer and Wolfgang E. Lorenz, www.dap.tuwien.ac.at
TU Wien, Institute of Architectural Sciences, Research Unit of Digital Architecture and Planning

Published by

Gabriel Wurzer and Wolfgang E. Lorenz, www.dap.tuwien.ac.at
TU Wien, Institute of Architectural Sciences, Research Unit of Digital Architecture and Planning

ISBN

978-3-903395-09-1

Kontaktadresse nach EU-Produktsicherheitsverordnung / Contact (EU GPSR)

TU Wien, E259.1 Digitale Architektur und Raumplanung,
Karlsplatz 13,
1040 Wien, Austria
gabriel.wurzer@tuwien.ac.at

Printed by

druck.at Druck- und Handelsgesellschaft mbH, Leobersdorf, Austria

Das Werk, einschließlich seiner Teile, ist urheberrechtlich geschützt. Für die Inhalte sind die Autorinnen und Autoren verantwortlich. Jede Verwertung ist ohne ihre Zustimmung unzulässig. Die Publikation und Verbreitung erfolgen im Auftrag der Autorinnen und Autoren, postalisch zu erreichen unter: PD DI Dr. Gabriel Wurzer, E259.1 Digitale Architektur und Raumplanung, Karlsplatz 13, 1040 Wien, Austria und per E-Mail unter gabriel.wurzer@tuwien.ac.at.

The work, including its parts, is protected by copyright. The authors are responsible for the content. Any use is not permitted without their consent. Publication and distribution are carried out on behalf of the authors, who can be contacted by post via PD DI Dr. Gabriel Wurzer, E259.1 Digital Architecture and Spatial Planning, Karlsplatz 13, 1040 Vienna, Austria and by e-mail at gabriel.wurzer@tuwien.ac.at.

Algorithms in Planning 2026

Editorial

*Gabriel Wurzer and Wolfgang E. Lorenz
TU Wien – Institute of Architectural Sciences, Research
Unit of Digital Architecture and Planning*

Research-driven education ("Forschungsgeleitete Lehre") is common throughout TU Wien, be it in the form of seminars, labs, or lectures. As such, the course "Algorithms in Planning" (259.669 SE, 3 ECTS) was nothing special: We looked at recent papers, did some background research on the State of the Art in Algorithmic Planning, and compiled these results into written reports (i.e., papers). However, unlike regular hand-ins, we used a conference system and compiled a proceedings instead of letting the good work go to waste. We also organized a (student-led) conference instead of an end-of-year presentation, so this is indeed special and not something that happens regularly at our university. The conference was held on 3 June 2026 between 9:00 am and 12:00 pm. Furthermore, we wish to thank all participants of the course for making the event possible:

*Ademi, Enkeljetë
Arslan, Utku
Chencheva, Veronica
Iaconis, Francesca
Kazemi, Mohamad mahdi
Kömürcü, Bircan
Korff, Elisabeth
Öksüz, Bükre
Onokevbagbe, Aikhomu Evans*

*Pando, Diego
Pykhacheva, Mariia
Ryu, Jinsan
Sejdiu, Ermira
Sinani, Rineta
Stalzer, Anna
Torres Perez, Esmeralda
Yilmaz, Aslı*

In terms of content, this proceedings book presents the work of our 17 students as follows:

- Each student compiled an **in-depth chapter** providing a state-of-the-art overview of recent topics, drawing on major conferences in their respective fields. For Building Science, chapters are based on the BAUSIM proceedings (available via IBPSA); for Architecture, on the eCAADe conference (papers available in CuminCAD); and for Data Science, on the IEEE Xplore digital library.

The papers were managed through OpenConf and automatically compiled into this volume using the in-house developed Proceedings™/lite/ system.

Gabriel Wurzer and Wolfgang E. Lorenz Vienna, June 2026

ORGANIZATION



digital
architecture &
planning

SPONSORS



ProceeDings™/lite/ v11.5
compiler
"In cloud we serve."

Contents

3 Papers

- 5 **Holistic computational design framework**
Elisabeth Korff
- 17 **Translating Architectural Knowledge into Short-Format Social Media: The Case of Nikola Dobrović**
Veronica Chencheva
- 25 **Finding the Best Restroom: Planning Algorithms for Real-Time Crowd Distribution in Public Venues**
Mariia Pykhacheva
- 37 **Introducing Multi-Objective Algorithmic Spatial Planning for Charging Accessibility in Contemporary Public Spaces**
Aslı Yılmaz
- 43 **A Rule-Based Comfort Algorithm for Passenger Distribution in Vienna's Metro System**
Diego Pando
- 49 **A Data-Driven Framework for the Qualitative Assessment and Algorithmic Integration of Recycled Concrete in Circular Construction**
Anna Stalzer
- 61 **Decision Logic for Occupant Behavioural Freedom in Building Energy Performance**
Bükre Öksüz
- 67 **Algorithmic Support for Post-Disaster Temporary Living Area Planning**
Bircan Kömürcü
- 73 **Generative Design System and Evolutionary Optimization for Architectural Layout Planning**
Francesca Iaconis
- 79 **Covering the Lot: Budget-Constrained Placement of EV Chargers in Parking Lots**
Jinsan Ryu
- 85 **Algorithmic Optimization of Vaulted Floor Slabs for Structural Performance and CO₂ Reduction**
Mohamad mahdi Kazemi
- 95 **Bridging the Gap: Parametric design model for social housing**
Esmeralda Torres Perez
- 101 **Algorithmic Compliance Checking in BIM: A Rule-Based Approach for Austrian Building Regulations**
Rineta Sinani
- 111 **Translating Urban Air Quality Data into Planning Knowledge: Algorithmic Approaches in Urban Planning**
Ermira Sejdiu
- 121 **Introducing KPIs for Sustainable Development Goals**
Utku Arslan
- 131 **Forecasting Building Futures: An Algorithm for Measuring Transformation Diversity (TDI)**
Enkeljetë Ademi
- 137 **Beyond Geometric Efficiency: Integrating Social Constraints into Multi-Objective Zoning Algorithms**
Aikhomu Evans Onokevbagbe