

Mathias Baumgartinger-Seiringer

🔗 Computer Scientist. 🎓 Academic.

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🌐 <https://mathias.toothgap.at>

📍 Vienna, Vienna, AT

My name is Mathias Baumgartinger-Seiringer. I am a creative developer that is passionate about craftsmanship surrounding software, games and other digital creations. Also, I am a firm believer in free and open source tools.

Experience

BOKU University

Oct 2021 – Oct 2025

📍 Austria, Vienna

Research Associate

Developing & writing scientific articles

Visualizing big geospatial data using game-engine Godot

Analyzing and manipulating of geospatial data in python

Landscape planning and development for energy-infrastructure

Conducting of digital stakeholder-workshops with innovative input methods

Assistance in administrative and organizational matters

Maintenance and creation of project websites using Hugo

- GIS
- Godot
- Geodata
- Python
- PyTorch
- Django
- Workshops

BOKU University

May 2020 – Oct 2021

📍 Austria, Vienna

Freelancer

Visualizing big geospatial data using game-engine Godot

Analyzing and processing of geospatial data

Development of a GIS-based serious game for energy-infrastructure

- GIS
- Godot
- Geodata
- Python
- Django
- Serious Games
- Landscape Planning

BOKU University

Feb 2020 – Apr 2020

📍 Austria, Vienna

Internship

Visualizing big geospatial data using game-engine Godot

Development of Virtual Reality features in Godot for large scale landscape visualization

Analyzing and manipulating of geospatial data


First impressions of landscape planning and development

- GIS

- Godot
- VR-Development
- Landscape Planning

BOKU University

May 2019 – Jan 2020

 Austria, Vienna

Freelancer

Visualizing big geospatial data using game-engine Godot

Gameplay and user-interface design


Analyzing and processing of geospatial data

Conceptualizing a GIS-based serious game for energy-infrastructure

- GIS
- Godot
- Game-Development
- VR-Development
- Serious Games
- Python
- Django

Lenzing AG

Jul 2019 – Aug 2019

 Austria, Lenzing

Internship


Development of internal Web-Tools using ASP.NET MVC and Microsoft SQL

Insights into automation- and production-processes

- ASP.NET MVC
- C#
- MSSQL

Jugendzentrum YouX

Jul 2018 – Jul 2018

 Austria, Vöcklabruck

Internship


Support during open operations, organization of workshops/events, and reliable handovers

Teamwork in shift operations, support during workshops/events

- Communication
- Organization
- Teamwork

Jugendzentrum YouX

Oct 2016 – Jun 2017

 Austria, Vöcklabruck

Civil Service

Support during open operations, organization of workshops/events, and reliable handovers


Teamwork in shift operations, support during workshops/events

- Communication
- Organization
- Teamwork

Education

University of Vienna

Oct 2020 – Present

 Austria, Vienna

MSc. in Computer Science

Selected Coursework: Foundations of Data Analysis, Advanced Software Engineering, Advanced Topics in Internet Computing & Software Technologies, Visualisation and Visual Data Analysis, Advanced Topics in Computer Graphics, Scientific Data Management, Advanced Software Engineering, Numerical Algorithms

University of Applied Sciences Technikum Wien

Sep 2017 – Jul 2020

📍 Austria, Vienna

BSc. in Computer Science

Selected Coursework: Introduction to Computer Science, Operating Systems and Computer Architectures, Data Modeling & Databases, Fundamentals of Programming 1 & 2, Fundamentals of Networking, Computer Science and Society, Mathematics 1 & 2, Applied Mathematics 1 & 2

BRG Schloss Wagrain

Sep 2012 – Jun 2016

📍 Austria, Vöcklabruck

A-Levels in Natural Sciences

Volunteer

Social Market

Jan 2020 – Aug 2020

📍 Austria, Vöcklamarkt

Temporary Worker

Temporary worker during the coronavirus pandemic to ensure operations continue.

Skills

🔧 Backend & APIs (Advanced)

REST API Design, Microservice Architecture, Auth, Accounts & Security, SQL and Database Modeling, Database modeling

🌐 Geospatial & Remote Sensing (Advanced)

GDAL / OGR, QGIS and QField, Remote Sensing, Land-use / Land-cover, Semantic Segmentation, TorchGeo, OpenStreetMap (OSM)

🔧 DevOps, Data & Infrastructure (Intermediate)

Docker / Docker Compose, Linux Server Admin, NGINX (reverse proxy), AWS Hosting, NumPy / Pandas / GeoPandas, CLI Geoprocessing (GDAL, ogr2ogr), Git / GitHub

👥 Research, Facilitation & Product (Advanced)

Scientific Writing, LaTeX, Inter- and Transdisciplinary Research, Workshops & Facilitation, Questionnaire Design, Stakeholder Engagement, Requirements Engineering

🔧 Frontend & Web (Intermediate)

SPA Architecture (Vue.js, SAPUI4), JavaScript, HTML5 / CSS3, Bootstrap, Tailwind, Static sites (Jekyll, Hugo)

🧠 Machine Learning & AI (Advanced)

Python, PyTorch, Computer Vision, Deep Learning, Experiment Design, Model Evaluation

🎮 3D & Visualization (Godot) (Intermediate)

Godot Engine, Custom Shaders, Landscape Visualization, Interactive Demos

Languages

🗣️ German — Native Speaker

📖 Latinum — Intermediate Latin Certificate

🗣️ English — Professional Working Proficiency

Interests

🎵 Music & Concerts

🧗 Bouldering

🍳 Cooking

🎮 Video Games

✈️ Travel

📷 Photography

Awards

Energy Globe Wien 2022 (Apr 2023) — Energy Globe Foundation Recognized for exceptional contributions to climate protection.

Publications

Concepts of Virtual Reality in GIS (May 2020) Bachelor Thesis [link] Due to the rapid progress of virtual reality hardware, these technologies are no longer niche products. Together with the much easier access to open geodata, new possibilities for procedural visualizations have opened up, combining Virtual Reality and GIS (VR-GIS) technologies. In this bachelor thesis a prototypical implementation of a modern VRGIS software is presented, including concepts for movement, orientation and visualization of data.

Large-Scale Agrivoltaics Visualisations for Assessing Landscape Impacts and Social Acceptance (Feb 2024) AgriVoltaics Conference Proceedings [link] Research article on large-scale agrivoltaics visualizations and their role in assessing landscape impacts and social acceptance.

Fencing Virtual Landscapes: Using GIS to Identify and Classify Fences and Hedges for More Accurate Landscape Visualizations (Jun 2025) Journal of Digital Landscape Architecture [link] Conference paper on using GIS to identify and classify fences and hedges for more accurate landscape visualizations.

Real-Time VR Landscape Visualization for Wind Farm Repowering: A Case Study in Eastern Austrian World Heritage Sites (Jun 2024) Journal of Digital Landscape Architecture [link] Conference paper presenting a case study on real-time VR landscape visualization for wind farm repowering in Eastern Austrian World Heritage Sites.

Windenergie im Spannungsfeld: Gesellschaftliche Akzeptanz, ökologische Herausforderungen und innovative Lösungen (Feb 2025) Poster presentation Poster presentation on wind energy in areas of tension: societal acceptance, ecological challenges, and innovative solutions.

Photovoltaik, Mensch und Biosphäre: Ein transdisziplinärer Ansatz zur Förderung der alpinen Resilienz (Jun 2023) Poster presentation [link] Poster presentation on a transdisciplinary approach to promote alpine resilience through photovoltaics, human interaction, and biosphere considerations.

Selected Projects

WIMBY - Wind in My Backyard

Jan 2023 – Mar 2026

Development of innovative tools to facilitate citizen and stakeholders interaction, knowledge sharing, and collaborative evaluation of impacts, conflicts, synergies and social innovation potential of wind energy.

- Wind Energy
- Stakeholder Engagement
- Social Innovation
- Impact Assessment

BioPV

Nov 2022 – Dec 2025

Photovoltaics, people and the biosphere: a transdisciplinary approach to promote alpine resilience.

- Photovoltaics
- Transdisciplinary Research
- Alpine Ecosystems
- Sustainability

LandscapeLab

Jan 2019 – Present

An open kit for developing game-based participatory landscape-planning tools.

- Godot Engine
 - Participatory Planning
 - Game-Based Tools
 - Open Source
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