Marcel **Siegmann**

INNOVATION TEAM LEAD & GEOSPATIAL SOFTWARE ENGINEER

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Summary

I am an experienced Geospatial Software Engineer and Innovation Team Lead at EOMAP with over ten years in geospatial and cloud technologies. Passionate about integrating cutting-edge cloud technologies with geospatial data, I constantly seek new advancements to enhance my expertise. Over the years, I have built and scaled satellite processing and API platforms in the cloud and contributed to award-winning frontend solutions that enhance decision-making with a strong focus on user experience. I specialize in implementing serverless microservice architectures with API backends in Python.

Work Experience

EOMAP GmbH & Co. KG
Berlin, Germany

INNOVATION TEAM LEAD & SENIOR GEOSPATIAL SOFTWARE ENGINEER — *2017 - Today*

- Lead the design and implementation of new features and cloud solutions, promote best practices in development and enhance collaboration and innovation within the team.
- Scaled satellite processing pipelines from locally running systems to cloud environments with SQS, Step Functions and AWS Fargate Containers to process hundreds of satellite scenes in parallel.
- Implemented microservice architectures with several API services, using Python and Go with backend frameworks (GeoDjango, FastAPI, Echo) and geospatial libraries (GDAL, Rasterio, Rio-Tiler). Deployment with CDK and Github Actions.
- Invention of a award winning serverless cloud application for visualizing and analyzing spatio-temporal raster data. Written with GDAL, Rasterio, Rio-Tiler, using AWS Lambda, S3, DynamoDB and Step Functions as cloud infrastructure.

University of Innsbruck
Innsbruck, Austria

RESEARCH ASSISTANT / DATA SCIENTIST / TUTOR — *2013 - 2017*

- Database management with Postgres / Postgis for meteorological data.
- GIS Automatisation in QGIS and ArcGIS.
- Creation of scientific plots and cartographic maps.
- Development of Open Source Tools for automated Analysis of Geoinformation (Python, Grass GIS, Saga GIS, QGis).

Honors & Awards

| 2022 | **Winner, Frontier Tech Challenge by ESA**, Copernicus Masters 2022 | *Rome, Italy* |
| 2020 | **Winner, Tech4Climate**, Bosch Connected Experience IOT Hackathon | *Berlin, Germany* |

Presentation

| 2023 | **RastLess - Serverless Visualization and Analysis of Geospatial Data**, Geoawesomness Meetup | *Berlin, Germany* |
| 2022 | **Serverless Spatio-Temporal Raster Data Analysis**, Cloud Native Outreach Event | *Online* |

Education

CODE University of Applied Sciences
Berlin, Germany

B.Sc. SOFTWARE ENGINEERING — *2018 - 2021*

- Thesis: Serverless Computing and its Potential for Cloud Native Geoprocessing

University of Innsbruck
Innsbruck, Austria

M.Sc. GEOGRAPHY — *2013 - 2016*

- Thesis: Provision of Snow Cover Information from Camera Images and its Potential for Snow Model Validation
- Specialisation: Natural Hazards & Alpine Hydroclimatology

University of Innsbruck
Innsbruck, Austria

B.Sc. GEOGRAPHY — *2010 - 2013*

- Thesis: GIS - based avalanche analysis in consideration of the avalanche bulletin