

# Stephan Seeger

Physicist



## CONTACT

 An den Brookwiesen 11  
26655 Westerstede  
Germany

 [stephan@domain-seeger.de](mailto:stephan@domain-seeger.de)

 +49 151 15598692

 <https://domain-seeger.de>

## I AM LOOKING ...

... for a job

- as a machine learning engineer
- in research & development
- full time, in permanent employment
- remote

## ML-EXPERTISE

|  |       |
|--|-------|
| Python, C++, SQL                                     | ★★★★★ |
| Pytorch, TensorFlow, JAX                             | ★★★★★ |
| Pandas, NumPy, Scikit-Learn, SciPy                   | ★★★★★ |
| Matplotlib, Plotly, Bokeh                            | ★★★★★ |
| Docker, K8s, Helm                                    | ★★★★★ |
| AWS, GCP, Azure                                      | ★★★★★ |
| Git, VS Code, Visual Studio                          | ★★★★★ |
| NLP, Reinforcement Learning, GANs, GNNs, SSL, AutoML | ★★★★★ |

## WORK EXPERIENCE

### Machine Learning Engineer *12/2021 - now* Independent education, Westerstede (Germany)

- Languages: Python, JavaScript
- Deep learning libs: Pytorch, TensorFlow, JAX
- ML libs: Pandas, NumPy, Scikit-Learn, SciPy, Dask
- Quantum computing libs: Qiskit, PennyLane, Cirq, TensorFlow Quantum, Q#, tket
- Visualization: Matplotlib, Plotly, Bokeh
- Web frameworks: Streamlit, Django, Dash, Flask, FastAPI
- Cloud computing: AWS, GCP, Azure
- Containerization: Docker, Kubernetes, Helm
- Infrastructure as Code: Ansible, Terraform
- Tools: Git, VS Code, GitHub Copilot, W&B
- NLP: Transformer, HuggingFace, Copilot, GPT-3, Dall-E2, Midjourney, Stable-Diffusion, TTS, ASR
- Advanced ML techniques: Reinforcement Learning, GANs, GNNs, SSL, AutoML

### Senior GNSS R&D Engineer *01/2018 - 11/2021* Caterpillar Trimble Control Technologies, Trimble Terrasat, Munich (Höhenkirchen, Germany)

- Languages: C++, Matlab, SQL
- Multiantenna GNSS solutions
- Sensor fusion of GNSS with inertial sensors and video-based systems (visual odometry, SLAM)
- High precision GNSS solutions under extreme vibrations on construction machines
- Implementation of a fully automatic and via a meta-JSON format freely configurable evaluation system for hyperparameter optimization that is based on parallel processing of hundreds of GNSS datasets and arbitrary JSON configurations of the GNSS software

### Receiver GNSS Engineer *01/2012 - 12/2017* Trimble Terrasat, Munich (Höhenkirchen, Germany)

- Languages: C++, Matlab
- Integration of the Chinese satellite navigation system Beidou and of Trimble's ground based pseudolite concept into the existing RTK software
- Major contributions to the generation of a new GNSS receiver software: Kalman filter processing of differential phase observations and ambiguity resolution via weighted averaging of best integer ambiguity candidates; infrastructure: observation data structure, simulation of GNSS observations, output of diagnostic information and its Matlab visualization

| SOFT SKILLS         |  |
|---------------------|--|
| creativity          | ★★★★★  |
| organization        | ★★★★☆  |
| presentation        | ★★★★☆  |
| LANGUAGES           |  |
| German (native)     | ★★★★★  |
| English             | ★★★★★  |
| French              | ★★★☆☆  |
| PATENTS             |  |
| Dec 2018            | Advanced navigation satellite system positioning method and system using seeding information |
| Feb 2015            | Timer initiated convergence of a GNSS receiver   |
| Feb 2015            | Fast GNSS receiver convergence by relative positioning                                       |
| Feb 2015            | Global navigation satellite system receiver convergence selection                            |
| Sep 2010            | GNSS signal processing to estimate phase-leveled clocks                                      |
| Sep 2010            | GNSS signal processing to estimate MW biases   |
| Nov 2006            | Method for multi-target-enabled resolution of phase ambiguity                                |
| AWARDS              |  |
| 2011                | Trimble Innovation Award   |
| INTERESTS & HOBBIES |  |
| • running           |  |
| • walking           |  |
| • piano             |  |

- Usage of ionosphere information or of a starting position for fast RTX position convergence after losing all carrier phase signals or after restarting the GNSS receiver
- Development of Trimble's post-broadcast integrity concept for RTX corrections

◆ **Network GNSS Engineer** 12/2007 - 12/2011  
**Trimble Terrasat, Munich (Höhenkirchen, Germany)**

- Languages: C++, Matlab
- Major contributions to Trimble's global RTX real-time GNSS correction service for precise satellite navigation positioning
- Estimation and ambiguity resolution of differential code-phase and pure phase satellite clock parameters
- Ambiguity resolution of satellite orbits

◆ **GNSS SW-Engineer** 09/2003 - 11/2007  
**Leica Geosystems, Heerbrugg (Switzerland)**

- C++-implementation of core algorithms (GPS & Glonass orbit computations, ambiguity resolution) of Leica's regional GNSS reference station software
- Research & development on the European satellite system Galileo in the framework of the EU supported research project [ARTUS](#)

◆ **Research Assistant** 10/1996 - 12/2002  
**Chair for Optics, University Erlangen-Nuremberg**

- Research & development on calibration of 3D-sensors as well as registration and 3D visualization of hierarchical triangle meshes
- Coordination and presentation of a project for the registration of 3D datasets in the collaborative research center [SFB 603](#)

---

## EDUCATION

---

◆ **Study of Physics** 10/1989 - 11/1995  
**Friedrich-Alexander University Erlangen-Nuremberg**

- Thesis: „1+1 dimensionale QCD auf dem Kreis in Axialer und Palumbo-Eichung“
- Grade: 1.73

◆ **Abitur** 07/1981 - 06/1988  
**Gymnasium Westerstede**

- Advanced courses in mathematics and physics