



GRID Newsletter Q2 2026

April 13, 2026

Welcome to the Q2 Newsletter!

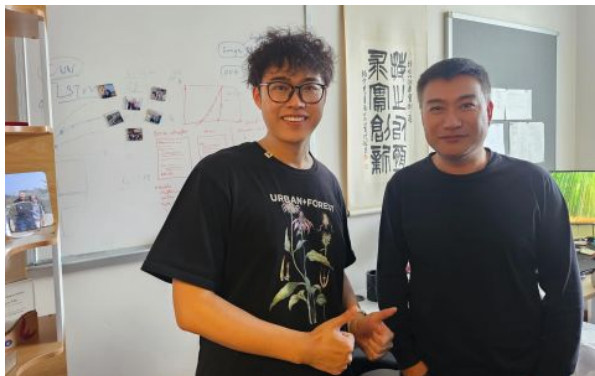
Dear readers,

In Q2 2026, GRID accelerated collaborations, tools, and outreach. Two secondees (TUM and BOKU) began exchanges at The Hong Kong Polytechnic University with [Prof. Z.-Y. Yin](#), strengthening EU-Asia ties in interpretable AI for geotechnics. BOKU's spin-off [deepsoil](#) launched commercialisation of [grai](#) for smartphone-based soil PSD. [ETS](#) visited BOKU for a GRID collaboration meeting and ML training, including a discussion with [Prof. Konrad Bergmeister](#) on WP5 tunnelling applications. We also rebuilt the project website using agentic-AI workflows, showcasing rapid, low-code modernisation. Our paper spotlight highlights ML evidence that specimen density, alongside cement content, is a key driver of strength in cement-stabilised clays. Engagement and dissemination KPIs continued to rise, and we look forward to meeting many of you at [ICSMGE \(Vienna\)](#), [InnoTrans \(Berlin\)](#), and [LeiGS \(Leipzig\)](#). Stay on the GRID!

Cheers,

Enrico Soranzo
GRID project coordinator

GRID Secondees at Hong Kong Polytechnic University



Tiancheng Wang of TUM (left in first picture) and Yianming Xu of BOKU (at the centre of second picture) together with Prof. Yin of Hong Kong Polytechnic

Tiancheng Wang (TUM) and Yianming Xu (BOKU) have officially begun their academic exchange at The Hong Kong Polytechnic University, hosted by [Prof. Zhen-Yu Yin](#) as part of the GRID Project. Engaging with different research environments is both challenging and enriching, providing valuable opportunities to broaden perspectives and deepen cooperation in geological modeling research.

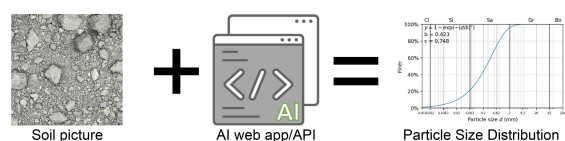
These secondments strengthen the collaboration between European and Asian partners within the GRID consortium, advancing research at the intersection of geotechnical engineering and AI.

BOKU Spin-off deepsoil: AI-Powered Soil Classification

Step 1



Step 2



Workflow of [grai](#), the [grading AI](#) solution of [deepsoil](#)

BOKU has launched the spin-off **deepsoil** to commercialize the **grai technology** that determines soil particle size distribution directly from smartphone images. The technology, originally developed at BOKU Vienna's **Institute for Civil Engineering**, combines deep learning with a portable "photobox" to deliver professional-grade results directly from the field, reducing analysis time from days to seconds. The spin-off joins a growing ecosystem of **BOKU Vienna ventures** commercializing research in environmental technologies.

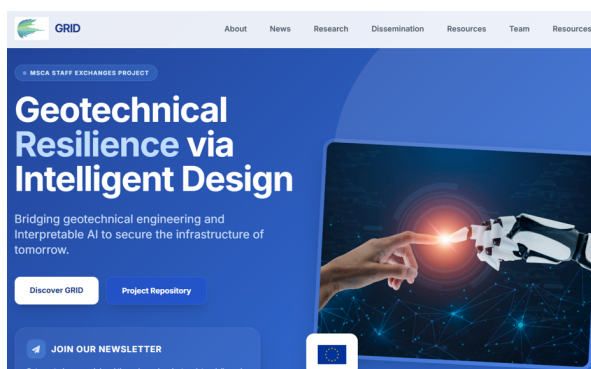
ETS Visits BOKU - GRID Collaboration Meeting



Above: Enrico Soranzo delivering a training on the application of machine learning to geotechnics. Below: ETS meeting with Prof. Bergmeister, former managing director of the Brenner Base Tunnel mega-project.

BOKU welcomed ETS representatives **Federico Foria**, **Mario Calicchio** and **Francesco Panico** for an intensive collaboration meeting. Enrico Soranzo delivered a ML training to the ETS team. A highlight of the secondment was the meeting with **Prof. Konrad Bergmeister**, former CEO of the **Brenner Base Tunnel mega-project**, discussing WP5 applications for tunnelling.

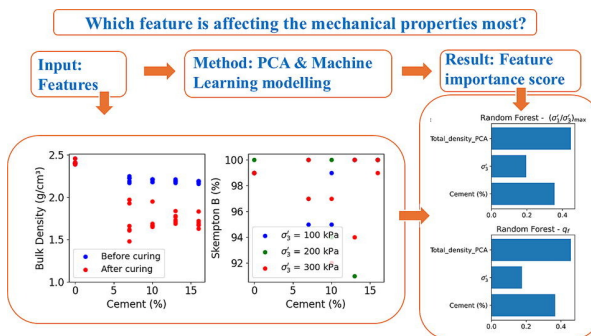
New website built with agent



Screenshot of the new website

Thanks to the agentic-AI revolution, a new website was launched in Q2 2026. The project served as an ideal use case to test AI agents: starting from the old site, an **agentic-AI minimal coding environment** produced a polished new website in minutes, demonstrating rapid, low-effort page generation and modernization.

Paper spotlight 1: Cement-stabilised clay: ML reveals density as a key driver



Features affecting mechanical properties most

Cement is a common chemical stabiliser in ground improvement, but how sample properties and testing conditions combine to determine mechanical behaviour is complex. This paper applies machine learning to a systematic study of cement-stabilised clay, analysing the joint effects of cement content, specimen density changes during curing, saturation during triaxial tests, confining pressure and stress state.

Using correlation analysis, principal component analysis and tree-based regression, the authors show that specimen density-alongside cement content-is a primary control on strength. Ensemble tree models markedly outperform linear approaches, highlighting both the value of non-linear methods and the importance of including density as a core feature when building predictive models for cemented soils.

Relevance to the project: strengthens the case for ML-driven, feature-aware modelling in geotechnical workflows and points to practical priorities for dataset design and algorithm selection across EU research and practice.

For further info, please see: [Shiferaw, H.M., Tosatto, S., Soranzo, E., Schneider-Muntau, B., Strength of a cement-improved clay and a machine learning evaluation of interactions between observed mechanical behaviours.](#)

Paper spotlight 2: GRAI3, device-agnostic soil PSD from smartphone photos



Features affecting mechanical properties most

GRAI3 puts soil granulometry in your pocket: a device-agnostic web app that turns standardized smartphone photos into particle size distributions-instantly. Powered by EfficientNetV2-S and a streamlined photo-box workflow, it predicts the Weibull PSD parameters directly from the image, $F(d) = 1 - \exp[-(d/\lambda)^k]$, with built-in checks, real-time inference, confidence via Monte Carlo dropout and a one-click PDF report. Cross-device validation shows clear gains over prior versions, enabling rapid, reproducible screening from field to lab.

For further info, please see: [Soranzo, E., GRAI3:](#)

[Generalizable soil particle size distribution from smartphone images.](#)

Upcoming Events

Catch up with GRID at these upcoming events:



Vienna: June 14–19, 2026



Berlin: September 22–25, 2026



Leipzig: November 12–13, 2026

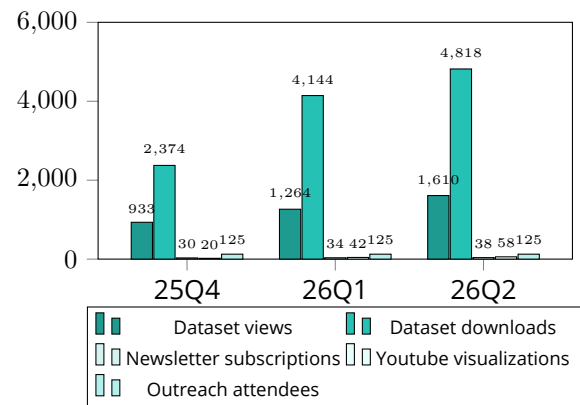
Spotlight on Research

Our recent publications include:

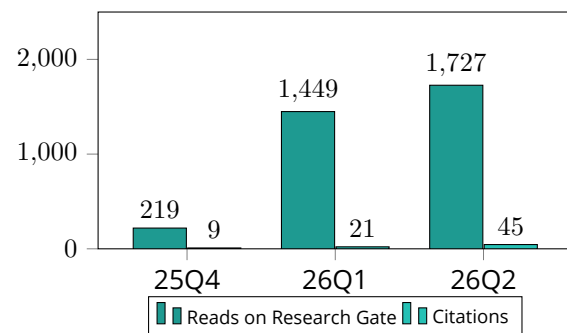
[Strength of a cement-improved clay and a machine learning evaluation of interactions between observed mechanical behaviours](#) ▶

[GRAI3: Generalizable soil particle size distribution from smartphone images](#) ▶

Engaging the Community



Communication KPIs of the GRID project



Dissemination KPIs of the GRID project

Get Involved

Join us in revolutionizing geotechnics and AI. Visit our website at grid.boku.ac.at.