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## Educational Profile

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<b>2021 - Present</b>	<b>Technische Universität Braunschweig, Germany</b> <b>PhD Candidate with 'Geo-ecosystems in Transition on the Tibetan Plateau (TransTiP)' international research program.</b>  Project: Geophysical methods to constrain sediment and water transport models at Alpine Catchments.  Geophysical investigation methods (ERT, GPR, HF-IP) may be used to detect and quantify permafrost, estimate hydraulic conductivity, as well as for the characterization of freeze-thaw cycles. Resulting information will be used to constrain models of water and/or sediment transport processes. Joint analysis techniques will be used in to reduce the ambiguity of the interpretation and to provide the best possible input for numerical simulations.
<b>2014 - 2015</b>	<b>Lancaster University, United Kingdom</b> <b>MSc Environmental Science and Technology – Grade Achieved: Merit (Mark: 67%)</b>  Dissertation Project: Effect of microstructures on the hydrogeophysical properties of sand – clay mixtures.  The project involved measuring hydraulic and geophysical properties of unconsolidated sand samples with dispersed clay, clustered clay and layered clay to determine if the geophysical measurements were sensitive to the spatial arrangement and abundance of the fine-grained clay.  The results of extensive data analysis showed that the geophysical parameters are indeed sensitive to the clustered and anisotropic distribution of clay and that the current hydrogeophysical models, are successful in predicting the hydraulic conductivity for sediment samples prepared within the scope of this study.
<b>2010-2013</b>	<b>St. Xavier's College Autonomous, University of Mumbai, India</b> <b>BSc in Geology – Grade achieved: First (GPA: 3.12/4.0)</b>  Carried out 15-day fieldwork, as Group Leader, on structural and lithological analyses of Malvan region, Maharashtra.  The study involved observation and identification of minor and major geological fault zones, beach profiling, paleo-current analysis using conglomerate pebble orientation, mapping sedimentary depositional structures in sandstone layers, mapping folded-bed orientation and extent, and mapping elevation differences using electronic theodolites.

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## Research Experience

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<b>January '21 - Present</b>	Research Assistant at Technische Universität Braunschweig, Germany  Research aim involves subsurface characterization of alpine catchment to detect and quantify permafrost, freeze-thaw cycles and estimate hydraulic conductivity.  Geophysical techniques of induced polarisation and ground penetration radar will be applied on field study site. Resulting data will be used as inputs for supporting research project in TransTiP, focussing on developing sediment and water transport models.
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## Commercial Experience

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<b>June '17 – January '21</b>	Senior Hazard Systems Consultant at Yordas Group (YG, previously known as The REACH Centre), Lancaster, UK.  Responsibilities include: Hazard assessment (environmental and health), classification and compliance assessment of products for both consumer and professional use, in accordance with current international chemical regulations.  Lead for YG's Poison Centre Notifications Service; includes development of service structure, client on-boarding, supervising operations and training.  Lead for YG's Hazard Communication Systems Services involving utilization of 'Software as a Service' platforms; includes system development and supervising operations and, undertaking analyses of
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client product inventory, to identify and implement effective mechanism for clear hazard information dissemination, via the SaaS solution.

Responsible for recruitment, line-management and training new employees in the Hazard Communication Team. Also responsible for financial management and budget-keeping for Hazard Communication Team.

**January '16 –  
June '17**

Regulatory Consultant at The REACH Centre, Lancaster, UK.

Duties included compliance assessment of Safety Data Sheets (SDS) and hazard classification of chemical products for both consumer and professional use, in accordance with current European chemical regulatory laws. Additional services include data and project management assistance in compliance assessment of > 5000 SDS through a TRC SaaS solution for a multinational client.

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## Voluntary Activities

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**November '19  
– January '21**

Volunteer Surveyor at Lancaster University, UK.

[Beyond the Castle](#) focusses on archaeological investigation of urban green spaces in Lancaster, for assisting landscape management and site development.

Duties include experimental set-up, data analyses and interpretation of geophysical field measurements undertaken using ERT, GPR and EMI.

**October '14 –  
January '21**

Weather Observer at Hazelrigg Weather Monitoring station, Lancaster, UK.

Duties include daily data collection of air and soil temperature, wind speed and direction, cloud shape and observable contrail, evaporation, precipitation and duration of sunlight. Measured data is recorded and reported to the Met Office.

**March '15 –  
September '15**

Volunteer at Canal and River Trust, Lancaster, UK.

Duties included surveying canals in and around Lancaster area and reporting prohibited discharges, harmful vegetation and conditions of the general facilities.

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## Skills

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### Technical

- Experience in working in a laboratory and field environment at graduate and postgraduate level
- Extensive experience of working with IP, ERT, GPR and EMI instruments for geophysical measurement
- Good experience in geophysical data inversion and modelling
- Extensive experience in data analyses and presentation using ERDAS Imagine and ArcGIS
- Extensive experience in modelling, programming and interpreting large datasets with MATLAB
- Experience in model building with TUFLOW and hydrological and geophysical CFD simulation with ANSYS Software Suite
- Experience of analysing and presenting results using Statistical Package for the Social Sciences (SPSS) and SigmaPlot
- Good experience in chemical analysis using Gas Chromatography – Mass Spectrometry (GC – MS) and Liquid Chromatography – Mass Spectrometry (LC – MS)
- Extensive experience of using Microsoft Office Suite at academic and professional level
- Experience in strategic planning, development and operations of commercial services
- Learnt valuable skills in resource and project management, working under pressure and ability to meet deadlines in a commercial environment

### Communication

- Good experience of working in an international scientific research group
- Good communication and report writing skills acquired through coursework and work experience
- Experience in conducting strategic business presentations
- Experience in training new starters and clients in a professional setting
- Fluent in English, Hindi and Punjabi; basic proficiency in French

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## Publications

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1. Osterman, G., Sugand, M., Keating, K., Binley, A. and Slater, L., 2019. Effect of clay content and distribution on hydraulic and geophysical properties of synthetic sand-clay mixtures. *Geophysics*, 84(4), pp.1-65.

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## References

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Available upon request.