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## Profile

A highly motivated student who is using his programming skills to deal with data, mostly seismological. Seeking for an position in either data science industry to be able face new challenges all the time. Multiple projects conducted in students' societies provided a lot of experience both as a team player and a team leader. With five years of experience in solving scientific problems with programming and half of a year on a junior backend developer position he proved to be able to quickly adapt and learn new techniques and technologies. Now, ready to face completely new challenges in either industry. Currently working on a PhD thesis which includes many data engineering tasks such as data aggregation, processing and visualization in a production grade technological stack including technologies such as Docker-Compose, PostgreSQL, Apache Airflow.

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## Education

- Oct 2017 – Present **Doctor of Science in Seismology**, *Institut de Physique du Globe de Strasbourg*,  
Thesis title: Monitoring of deep reservoirs with ambient seismic noise,  
Supervisors: Jerome Vergne, PhD. IPGS, Jean Schmittbuhl.  
Keywords: Ambient Seismic Noise Interferometry, Python, Data Science, ETL, Apache Airflow, PostgreSQL.
- Oct 2015 – Jul 2017 **Master of Science in Geophysics**, *University of Silesia in Katowice*,  
Thesis title: Seismic noise analysis for purpose of Active Layer of Permafrost investigations in a region of Polish Polar Station in Hornsund, Svalbard,  
Supervisor: Dorota Olszewska, PhD. Institute of Geophysics, PAS.  
Keywords: HVSR, Local effects, Python, ObsPy, Matlab, Git.
- Oct 2012 – Jun 2015 **Bachelor of Science in Geophysics**, *University of Silesia in Katowice*,  
Thesis title: Seismic network optimization in the LGCD area with use of simulated annealing algorithm,  
Supervisor: Maciej Mendecki, PhD. University of Silesia.  
Keywords: Matlab, Monte Carlo Sampling, D-optimum solution.

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## Experience

- April 2017 – Sep 2017 **Junior Java Developer**, *ACC Cyfronet AGH*.  
Responsibilities Programming in Java with use of Spring, MongoDB, GWT, Angular. Programming in Python with use of ObsPy, Numpy, Scipy.
- May 2016 – Nov 2016 **Intern**, *Institute of Geophysics, Polish Academy of Sciences*.  
Internship coordinator Dorota Olszewska, PhD.  
Responsibilities Creating Python scripts to process seismic signal to apply HVSR method; Creating and maintaining SQLite database of PGA parameters for LGCD region; Creating Python scripts for solving different problems and tasks in the Institute
- Jun 2015 – Jul 2015 **Intern**, *Institute of Geophysics, Polish Academy of Sciences*.  
Internship coordinator Dorota Olszewska, PhD.  
Responsibilities Seismic signal processing in Matlab; HVSR method implementation in Matlab
- Jan 2015 – Oct 2017 **Member of a scientific project**, *University of Silesia in Katowice*.  
Member of a project *Permafrost interaction as an environmental continuum between glacial and periglacial domain in Tarfala (Scandinavia) and Hornsund area, Spitsbergen* under leadership of dr hab. Wojciech Dobiński, University of Silesia, Department of Earth Science.  
Participant of the Scientific Expedition to the Spitsbergen in Aug - Sep 2015  
Responsibilities Preparing and conducting Electrical Resistivity Tomography surveys; Data processing and interpretation

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## Programming

Python	4 years of experience	<i>Obspy, Scipy, Numpy, Matplotlib, Pandas, SQLAlchemy</i>
Java	1 year of experience	<i>Spring, Springboot, GWT</i>
SQL	2 years of experience	
Utilities	Docker, Docker Compose, Apache Airflow, Git, Latex, Bash, TravisCI, CircleCI	
Databases	SQLite, PostgreSQL, MongoDB	
Minor experience	R, Matlab	

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## Voluntary Services

Oct 2015 – Aug 2016	<b>Organizing Committee Member.</b> 7 <sup>th</sup> International Geosciences Student Conference in Katowice, 11 <sup>th</sup> -14 <sup>th</sup> July 2016
Responsibilities	Organization of worldwide scientific conference for 150 students and young professionals as a core member of organizing committee
Jan 2016	<b>Volunteer, Biebrza National Park, Poland..</b>
Responsibilities	Data preparation, processing and preparing for publishing in form of maps using ArcGis software.
Oct 2014 – May 2015	<b>Organizing Committee Leader.</b> VIII Student Scientific Workshops Geosfera 2015 in Żory, 23-26 <sup>th</sup> April 2015
Responsibilities	Organization of scientific conference for 130 students as leader of organizing committee

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## Languages

Polish	Native	
English	B2/C1	<i>Full professional fluency</i>
French	Elementary	
Russian	Elementary	

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## Grants and Awards

- 2016 — Best Student Poster Award of Session 18 during 35<sup>th</sup> General Meeting of European Seismological Commission, Trieste 2016
  - Travel grant to participate in Advanced School on Seismology Beyond Textbooks & 35<sup>th</sup> General Meeting of European Seismological Commission, Trieste, 2016
- 2015 — Travel Grant to participate in Society of Exploration Geophysicists & Chevron Student Leadership Symposium, New Orleans, 2015.
- 2012 — Winner of the XVI Contest of Technical Knowledge 2012, organized by University of Silesia in Katowice( XVI Konkurs Wiedzy Technicznej).

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## Student Scientific Associations

Oct 2012 – Jul 2017	Student Science Association of Geophysicists PREM	<i>Positions: Vicepresident, Member</i>
Jan 2014 – Jul 2017	University of Silesia Student Chapter of the EAGE	<i>Positions: President</i>
Jan 2015 – Jul 2017	University of Silesia Student Chapter of the SEG	<i>Positions: President, Vicepresident</i>

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## Personal interests

- Hiking, running, swimming, mountaineering, polar regions
- Technology, IT, programming
- Seismology, geophysics, statistics, data science

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## Published materials

### Publications

- 2018 — Kula, D., Olszewska, D., Dobiński, W., Glazer, M.; Horizontal-to-vertical spectral ratio variability in the presence of permafrost, *Geophysical Journal International*, Volume 214, Issue 1, 1 July 2018, Pages 219–231, DOI 10.1093/gji/ggy118
- 2014 — Glazer, M., Kula, D., Saturnus, R., Lewicki, P.; Geophysical Exploration of Castle Remains in Barwałd Górny (Near Kalwaria Zebrzydowska, Poland) Using Electrical Resistivity Tomography (ERT) with Assistance of Depth of Investigation Index (DOI) Method; *Contemporary Trends in Geoscience*, 3(1), 24–31., DOI 10.2478/ctg-2014-0019

### Presentations

- 2016 — Kula D. Comparison of methodology of calculating HVSR for seismic noise and seismic event (in Polish); Presentation during IX Nationwide Geophysical Workshops Geosphere 2016
- 2015 — Kula D. Seismic network D-optimization with use of simulated annealing algorithm; Presentation during 8<sup>th</sup> Geosymposium of Young Researchers "Silesia 2015"
- Kula D. Optimisation of seismic network using simulated annealing algorithm (in Polish); Presentation during VIII Nationwide Geophysical Workshops Geosphere 2015
- 2014 — Kula D., Saturnus R., Lewicki P., Geophysical explorations of castle remains in Barwałd Górny using ERT method with assistance of 2,5D and DOI Index (in Polish); Presentation during VII Nationwide Geophysical Workshops Geosphere 2014

### Posters

- 2018 — Kula D., Lehujeur M., Vergne J., Schmittbuhl J., Zigone D.; Steps toward monitoring a deep geothermal reservoir in northern Alsace with ambient seismic noise interferometry; 80<sup>th</sup> EAGE Conference & Exhibition 2018; Copenhagen 2018;
- Kula D., Vergne J., Schmittbuhl J., Zigone D.; Monitoring a deep geothermal reservoir in northern Alsace with ambient seismic noise interferometry; 9<sup>th</sup> European Geothermal PhD Days; Zurich 2018;
- Kula D., Vergne J., Schmittbuhl J., Zigone D.; Towards monitoring deep geothermal reservoirs in Alsace with ambient seismic noise; 6<sup>th</sup> European Geothermal Workshop; Strasbourg 2018;
- 2017 — Kula D., Olszewska D.; Seasonal variability of Horizontal to Vertical Spectral Ratio in polar regions; European Geosciences Union General Assembly 2017; Vienna 2017;
- 2016 — Kula D., Olszewska D., Dobiński W., Glazer M.; Comparative analysis of ERT and seismic noise changes in time for purpose of active layer investigations; 35<sup>th</sup> General Assembly of European Seismological Commission, Trieste 2016; **Awarded with Best Student Poster Award**
- Olszewska D., Kula D.; Preliminary site-effects characterization by inversion of HVSR data in mining area; 35<sup>th</sup> General Assembly of European Seismological Commission, Trieste 2016
- Kula D., Olszewska D., Dobiński W., Glazer M.; Using HVSR Method for Estimating Thickness of Active Layer of Permafrost; 7<sup>th</sup> International Geosciences Student Conference, Katowice 2016
- Kula D., Olszewska D., Dobiński W., Glazer M.; Comparative analysis of ERT and seismic noise changes in time for purpose of active layer investigations; 36<sup>th</sup> Polar Symposium, Lublin 2016
- 2015 — Kula D., Glazer M., Bieta B.; ERT Surveys over anthropogenic void of known dimensions, 6<sup>th</sup> International Geosciences Student Conference, Prague 2015

- Bieta B., Kula D.; Results of electrical resistivity tomography surveys over anthropogenic void (in Polish), VIII Nationwide Geophysical Workshops Geosphere 2015, Żory 2015
- 2014 — Glazer M., Kula D., Saternus R.; Geophysical explorations of castle remains in Barwałd Górny, VII GeoSymposium of Young Researchers Silesia 2014, Ustroń 2014
- Kula D., Glazer M., Saternus R.; ERT surveys over ruins of Castle in Barwałd Górny (in Polish), I Ogólnopolski Zjazd Kół Geologicznych, Przesieka 2014.