



Izabela Bujak-Ozga

Address: Birmensdorf, Zurich, Switzerland

Driving license: category B, since 2009

Email: hydrology@izabelabujak.com

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Professional experience

Knowledge

- Hydrology & hydrogeology
- Statistics

Data analysis

- Time-series analysis
- Geostatistics
- Isotope and hydrochemical data analysis
- Working with large datasets

Programming

- R, Python
- MySQL
- Git

Soft skills

- Team management
- Critical thinking
- Self-organization

Field work

- Regional monitoring design
- Surface-, ground-, and soil- water sampling
- Wireless sensor networks
- Sensors and data loggers' maintenance

Lab work

- Silver nitrate method
- Denitrifier method
- Nessler's reagent test
- Ammonium molybdate test

Languages

- English (C1/C2)
- German (B1)
- Polish (Mother tongue)
- Spanish (A2)

Software

- Esri ArcGIS, QGIS
- GIMP, Procreate
- MS Office

Postdoctoral Researcher

July 2024 – September 2024 | ECHO – Laboratory of Ecohydrology, École Polytechnique Fédérale de Lausanne - EPFL | Lausanne, Switzerland

Research interests:

- Catchment hydrology.

Major skills and tasks:

- Statistical data analysis (R, MySQL).
- Scientific writing.

Doctoral Assistant

April 2020 – June 2024 | ECHO – Laboratory of Ecohydrology, École Polytechnique Fédérale de Lausanne - EPFL | Lausanne, Switzerland

Research interests:

- Spatiotemporal dynamics of flow and hydrochemistry in drainage networks.

Major skills and tasks:

- Catchment monitoring design for five Swiss catchments.
- Statistical data analysis of large datasets (R, MySQL).
- Project management - coordination of team of 4 people during fieldwork and data analysis.
- Water sample collection of stream water, groundwater, soil water, precipitation (over 2800 samples), including subsequent preparation for laboratory analysis.
- Installation and maintenance of field equipment (e.g., wireless sensor network, water level sensors, piezometers, automatic samplers ISCO and MAXX, weirs, lysimeters, rain gauges).
- Stream mappings (over 8000 stream state observations).
- Scientific writing: 3 scientific publications.
- Handling spatial data (ArcGIS, R).
- Presenting at international conferences.

Research Assistant

November 2016 - January 2020 | Catchment Hydrology Department, Helmholtz Zentrum für Umweltforschung - UFZ | Halle (Saale), Germany

Research interests:

Drivers of nitrate dynamics within mesoscale river catchments

Major skills and tasks:

- Working with large data sets (hydrological, hydrochemical, stable isotope).
- Data analysis in R (Bayesian mixing models, time-series analysis, usage of genetic algorithms, geostatistics) and handling spatial data (R, ArcGIS, and Python).
- Designing regional monitoring strategies for catchments located in 3 EU countries (AT, BE, SLO).
- Conducting 14 sampling campaigns in 4 EU countries (AT, BE, SLO, DE).
- Surface water, groundwater, and precipitation sampling (over 2500 samples collected).
- Installation and maintenance of field equipment (iFLUX, rain gauges, water level sensors) and discharge measurements using portable flow meter.
- Cooperation with project partners from various countries, including secondment at ULg in Liege (3 months).
- Experience in laboratory work, e.g., analysis of $\delta^{15}\text{N}_{\text{NO}_3}$ and $\delta^{18}\text{O}_{\text{NO}_3}$, $\delta^{15}\text{N}_{\text{bulk}}$, ion concentrations.
- Writing scientific papers, periodical reports, and deliverables.
- Presentation at international conferences and co-chairing the session at GQ2019 conference.
- 24 courses attended (for detailed description, please visit my web page www.izabelabujak.com).

Regional GIS Consultant

July 2015 - December 2015 | SmallGIS Sp. z o.o. | Cracow, Poland

Major skills and tasks:

- Advising Polish municipalities in solving current problems related to the GIS usage covering technical and legal aspects.
- Providing training on GIS software usage including seminars, presentations, and courses for Polish municipalities.
- Development of interpersonal communication skills - face to face and virtual interactions.
- Software: Team Viewer, QGIS.

Spatial Data Verifier

October 2015 - December 2015 | SmallGIS Sp. z o.o. | Cracow, Poland

Major skills and tasks:

- Verification of municipalities work in the area of spatial development and GIS usage using QGIS and Microsoft Excel (vba scripts).
- Technical support for municipalities on GIS usage.

Education

Doctor of Science

April 2020 - June 2024 | ECHO – Laboratory of Ecohydrology, École Polytechnique Fédérale de Lausanne - EPFL | Lausanne, Switzerland

Field of interest: catchment hydrology, hydrochemistry

Thesis: 'Spatiotemporal dynamics of flow and hydrochemistry in drainage networks'

Master's degree in Environmental Protection

March 2014 - May 2016 | AGH University of Science and Technology | Cracow, Poland

Specialization: Hydrogeology

Field of interest: Groundwater remediation, groundwater hydrogeochemistry.

Thesis: 'Combined aquifer thermal energy storage and groundwater remediation.'

Selected courses:

- Analytical methods in investigation of the water quality; sampling methodology; migration of organic contaminants in the soil-water environment; determination of the contaminant migration parameters in the soil-water environment.
- Software: hydrogeological modeling (MODFLOW); GIS in water management and water protection (ArcGIS, QGIS).
- Fieldwork: field practice in water protection; hydrogeochemistry of contaminated water course including field practice; oxidation and reduction reactions in the water environment course including field practice.

Bachelor's degree in Environmental Protection

October 2010 - February 2014 | AGH University of Science and Technology | Cracow, Poland

Thesis: 'The use of selected groups of microorganisms in biofuel production.'

Selected courses:

- Hydrology and water resources management; hydrogeology and formation of water resources; geology; ecology; geomorphology; meteorology and climatology.
- Laboratory courses: chemistry; biochemistry; microbiology; geochemistry.
- Fieldwork: cartography field practice; geology field practice.

Postgraduate Diploma in Environmental, Health and Safety (EHS) Management

October 2015 - July 2016 | Tadeusz Kościuszko University of Technology | Cracow, Poland

Selected courses: Pedagogical course; first aid course.

Instrumentalist musician

September 2006 - October 2016 | State Music School | Cracow and Tarnów, Poland

Acquired skills: Performing on stage in front of a broad audience; perfect organization of time; coping with stressful conditions; teamwork skills; creative thinking.