Szilárd Dénes

Geologist / Developer

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ABOUT

- Geologist with 10+ years in the hydrocarbon industry, combining analytical expertise with programming skills to solve complex problems and automate workflows.
- Since 2022, freelancing remotely in hydrocarbon exploration and analysis, providing geological consulting services to petroleum companies. As a side project, developing AI-powered tools to help geoscientists explore, investigate, and manage their data more efficiently.
- Also pursuing a personal project of building our own home on an off-grid area in the forest, applying project management and problem-solving skills gained from years of technical work.

SKILLS

Geology Skills

Seismic interpretation (2D-3D)   AVO analysis   Well Ties   Geo-Modelling with complex multiple grids

Petroleum System Analysis-basic migration models   Addressing the main risk elements (source/seal/pathway/trap)   Data integration

Database building

Geoscience Software

IHS Kingdom (10+ years)

Extensive experience in basic interpretation workflows including time-depth conversions, synthetic well ties, and volume calculations. Proficient in professional data loading and QC procedures, well data management, and attribute calculations. Conducted AVO analysis on Pre-Stack data and generated prospects based on analogs from the same dataset, ensuring context-driven interpretations.

PaleoScan (Advanced workflows)

Developed advanced skillset during the interpretation of a 500 km² Romanian 3D seismic dataset. Created horizon stacks and DRS surfaces to investigate geomorphology through actual interpreted horizons rather than just time slices. Applied spectral decomposition with RGB blending to delineate geological features (channels, lobes) and assess depositional environments. Performed alternative AVO analysis using crossplot toolsets to compare gas/oil analogues with prospects across multiple seismic attributes.

ZetaWare PSA Toolset (Basin and prospect scale)

Used 1D modeling tool and hotspot data analysis for regional basin-scaled overviews on fluid types and temperature models. Applied 3D package to visualize petroleum system models and fluid distribution in relation to temperatures and horizons. Created hydrocarbon migration risk maps for both local prospect-scale and regional-scale interpretations, including major projects in the Derecske trough and Romanian EX-1 and EX-5 areas.

Petromod & Migris (Project-based)

Applied Petromod 1D modeling tool for dissertation work. Collaborated with Migris group from Norway using academic license to create hydrocarbon migration models for the Jászság Basin, developing expertise in modeling possible hydrocarbon migration pathways.

QGIS (2+ years database management)

Served as responsible person for GIS database management at OGD and SHPR companies. Produced professional maps using developed template systems and maintained SQL databases with regular updates. Performed standard GIS tasks including measuring, comparing, visualizing geological features, and coordinate conversions between different UTM zones.

Web Development & Programming

Enthusiastic about leveraging code to solve complex problems and streamline workflows across diverse domains.

- Passionate about continuous learning and adapting to new technologies and programming paradigms
- Automate geological workflows and build specialized databases for efficient data management
- Develop custom websites and web applications for clients across various industries
- Create and enhance business systems including CRM solutions, ERP integrations, and workflow automation tools

WORK EXPERIENCE

Mhyner Geoconsulting Kft.   *Nov, 2024 — present*
Exploration Geologist / Developer

Periodic freelance contributions - providing specialized support for growing initiatives. Building a geological database from seismic and well data and performing semi-regional interpretation work.

Sand Hill Petroleum BV   *Apr, 2024 — Dec, 2024*
Exploration Geologist

Undertook a comprehensive interpretation of a new 500 km² 3D seismic dataset, delivering risk analysis, ranking, and peer review materials for multiple prospects.

- Helped the systematic interpretation of a 500 km² 3D seismic dataset.
- Performed quality control on seismic and gather data for accuracy.
- Conducted AVO analysis in Paleoscan to evaluate hydrocarbon potential.
- Prepared peer review materials, identifying and analyzing key prospect risks.
- Evaluated and ranked 12-15 prospects based on hydrocarbon phase and volume.
- Delivered detailed volume calculations for prospect assessment.

O&GD Central Ltd.   *Oct, 2023 — Dec, 2023*
Exploration Geologist

Provided geological expertise and support in AVO analysis for evaluating multiple prospects.

- Conducted AVO analysis on several prospects to assess hydrocarbon potential.
- Collaborated with interpreters to provide geological insights and support.
- Enhanced the geological understanding of prospects for decision-making.

Sand Hill Petroleum BV   *May, 2023 — Oct, 2023*
Exploration Geologist

Managed data quality, AVO analysis, and geological interpretation for prospect evaluation and Peer Review preparation.

- Cleaned and organized IHS Kingdom project data with consistent naming conventions
- Executed AVO analysis on prospects including Pre-Stack and Post-Stack analysis
- Conducted prospect comparisons with analogs to predict fluid types
- Provided geological interpretation support including cross-sections and isopach maps
- Executed detailed horizon and fault mapping at prospect scale
- Contributed to Prospect Ranking and Peer Review preparation

O&GD Central Ltd.   *Apr, 2023 — May, 2023*
Data Entry Specialist

I worked on an IHS Kingdom project designed for data room usage, involving efficient and technical handling of datasets and software.

- cleaning the project by removing non-relevant data (e.g., well data, cultural data, seismic data) outside the AOI
- ensuring consistent naming conventions for horizons and grids
- segmenting 3D and 2D seismic data according to block boundaries
- organizing data into Collections for each prospect
- composing comprehensive and searchable documentation within the framework of the data room presentation, emphasizing crucial information

North American Helium

Nov, 2022 — Apr, 2024

Data Entry Specialist

Periodical freelance contribution: I specialize in using IHS Kingdom Software to load 2D and 3D seismic surveys, load data, and perform data quality control. I have extensive experience in using IHS Kingdom Software and have developed expertise in data loading and quality control techniques.

- loading 2D and 3D seismic surveys into Kingdom software
- loading of 2D and 3D gathers
- loading any kind of data
- performing data quality control
- converting coordinates from different UTM zones using QGIS

Geoszféra Kft.

Feb, 2023 — Jul, 2023

Freelance Developer

As a Developer at Geoszféra Kft. I am responsible for revisiting Excel VBA Addons created by a former colleague. My role involves reviewing and modifying the code to ensure that it is functional, efficient, and error-free. To help users understand how to use these add-ons, I also write documentation that explains the purpose, functionality, and usage of each tool.

- I clean up the existing Excel add-ins to remove any unnecessary code, optimize performance, and make them more user-friendly. This involves restructuring the code, renaming variables, and adding comments to make it easier to read and understand.
- If necessary, I also rewrite the add-ins in a more modern programming language, such as C#.
- Throughout my work, I focus on delivering high-quality code and documentation that meets the needs of the end-users. By doing so, I help to ensure that our geotechnical engineering teams have access to the tools they need to do their jobs effectively.

Geohisztor Kft.

Jan, 2023 — present

Freelance Developer

As a web developer at Geohisztor Kft. I design and develop their website from start to finish. My goal is to help Geohisztor Kft. establish a strong online presence and build a brand that resonates with their target audience.

- logo design in Figma
- schematic UI/UX design
- programming the website in SvelteKit, and hosting and managing the site

Soler Partners Kft.

Apr, 2022 — Feb, 2023

Freelance Developer

I transferred a company's data, projects, and workflows from excel files and folders into the Odoo ERP (Enterprise Resource Planning) system. Besides, I built a VBA-based Excel program that generates documents with a given database and different PDF templates.

- Email lead integration in the system
- Writing workflow automation and data validations in Python
- Creating custom reports in Odoo studio, using HTML and CSS
- Database build and management
- Python scripts to solve various problems in Odoo

O&GD Development Kft   *Jul, 2015 — Sep, 2022*
Exploration Geologist

Detail-oriented geology work, with multidisciplinary approach to exploration from basin scale (PSA - Petroleum System Analysis) to seismic interpretation and prospect generation. High-level data integration, including wells, seismic and geochemistry. Everyday problem solving and workflow optimization at any level (geology, data, software).

- Independently generated an inventory prospects, with several advanced to peer review stage and subsequent approval for drilling.
- Handled levels of responsibilities far beyond my experience level
- Seismic interpretation, prospect and lead generation plus basic geophysical work on Hungarian and Romanian assets in team
- Completing Petroleum System Analysis (PSA) projects for the OGD's focus areas
- Involved in international data rooms and License Round evaluations
- Hydrocarbon migration modelling to address the migration risk in the prospect evaluation process
- Data mining, various geodatabase building (excel VBA scripting and ArcGIS)

Geogold Kárpátia Kft   *May, 2015 — Jun, 2015*
Field Geologist

Fieldwork -> VES (Vertical Electric Surveying) study in NW Romania.

Szekler Resources LTD   *Jul, 2014 — Aug, 2014*
Geologist

Technical work and support for a micropaleontological study.

SC Geosearch SRL   *Apr, 2014 — Jul, 2014*
Field Geologist

Fieldwork -> geotechnical drilling/surveying.

EDUCATION

Babeș-Bolyai University   *Sep, 2009 — Jul, 2013*
BSc - Department of Geology

Thesis: 3D modelling of Simonesti gas field, based on sequence stratigraphy

Babeș-Bolyai University   *Sep, 2013 — Jul, 2016*
MSc - Geology of Sedimentary Basins

Thesis: An approach on HC migration modelling for the Jászság-basin, Hungary

PROFESSIONAL TRAINING

Rose & Associates LLP   *28, May, 2019 — 29, May, 2019*

Budapest, Hungary • Instructor: Doug Weaver

DHI Consortium Europe   *28, May, 2019 — 29, May, 2019*

Madrid, Spain • Instructor: DHI Consortium

DHI Field Trip   *29, May, 2019 — 02, Jun, 2019*

Aínsa Basin, Spain • Instructor: Henry S. Pettingill

CGG GeoSoftware   *01, May, 2019 — 02, May, 2019*

Budapest, Hungary • Instructor: Shervin Rasoulzadeh

RPS/Nautilus   *19, Nov, 2018 — 23, Nov, 2018*

Stavanger, Norway • Instructor: Joe Cartwright

RPS/Nautilus	*18, Jul, 2018 — 22, Jul, 2018*

Stavanger, Norway • Instructor: Jenny Garnham

Petroskills	*16, Oct, 2017 — 20, Oct, 2017*

Houston, Texas • Instructor: Lawrence W. Teufel

AAPG ELTE	*16, Oct, 2017 — 20, Oct, 2017*

Budapest, Hungary • Instructor: Bartha Attila

AAPG ELTE	*18, Apr, 2017 — 21, Apr, 2017*

Budapest, Hungary • Instructor: Bartha Attila

Foundational C# with Microsoft	*29, Jan, 2025 — 26, Feb, 2025*

freeCodeCamp.org • Instructor: Microsoft Developer Division

AWARDS & RECOGNITION

2nd place
Transylvanian Student's Scientific Conference • 2012

The macrofossils of the Brüll viewpoint

2nd place
Contest under the POSDRU program • 01, Nov, 2014

Mineralogical study of the Neogene hydrotermal mineralisation at Gura Baii Mountains, Bistrița Năsăud County, Romania

LANGUAGES

Hungarian: Native proficiency

Romanian: Professional working proficiency

English: Professional working proficiency

REFERENCES

Martin Olsen
"I've worked with Szilard for 6 years at O&G Development. He wore many hats there and was very quick to climb learning curves -- even when the subject was complex."

Stephen Anfort
"From the first time I met Szilárd, I knew he was a high performer. His dedication to completing assigned tasks, thinking on his feet and persistence in solving difficult problems made him an invaluable team member. He performs far above the level of his experience, turning out quality work equivalent to his more experienced colleauges."