

# Ing. Bc. Michal Lauer

✉ [michal.lauer.25@gmail.com](mailto:michal.lauer.25@gmail.com)   [laumi.me](https://laumi.me)   [in](#) LinkedIn   [GitHub](#)

## Work Experience

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| <b>Publicis Groupe</b> , Data Scientist   | April 2025 — Current  |
| <ul style="list-style-type: none"><li>• Leverage Marketing Mix Modeling to optimize marketing strategies and budgets.</li><li>• Use Python to automate and streamline processes.</li></ul>  |                       |
| <b>MŠMT</b> , Data Engineer   | Aug 2023 — March 2025 |
| <ul style="list-style-type: none"><li>• Developed and maintained production <b>R Shiny applications</b>.</li><li>• Used <b>Git</b> to automate deployment and code validation.</li><li>• Leveraged <b>Docker</b>, <b>Google Cloud Platform</b>, and <b>Linux</b> for automation.</li></ul>  |                       |
| <b>Rohlik Skillz s.r.o.</b> , Machine Learning Engineer ( <i>Internship</i> )   | May 2024 — Sep 2024   |
| <ul style="list-style-type: none"><li>• <b>Optimized</b> order predictions by identifying extreme values and missing features.</li><li>• Wrote Python production code for <b>ML predictions</b>.</li><li>• Leveraged <b>Keboola</b>'s transformations using <b>Python</b> and <b>SQL</b>.</li></ul>   |                       |
| <b>IBM</b> , Data Scientist ( <i>Internship</i> )   | May 2023 — July 2023  |
| <ul style="list-style-type: none"><li>• Used <b>PySpark</b> and <b>SQL</b> to analyze, filter, and derive new features.</li><li>• Applied <b>MLlib</b> methods (regression, classification).</li><li>• Learned and applied <b>Git</b>, <b>GitHub Actions</b>, and <b>Docker</b>.</li></ul>  |                       |
| <b>ReMuS</b> , Data Manager ( <i>Part-time</i> )  | March 2022 — Dec 2022 |
| <ul style="list-style-type: none"><li>• Successfully delivered 5+ medical analyses in <b>R</b> with dynamic Excel outputs and customized HTML/PDF reports.</li><li>• Prepared <b>R</b>, <b>RStudio</b>, <b>R Markdown</b>, and <b>Git</b> work standards documentation.</li><li>• Modernized infrastructure with reusable code, semi-automatic analyses, and code best practices.</li></ul> |                       |

## Freelance Experience

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| <b>MŠMT</b> <a href="#">↗</a> , R Shiny Engineer                         | 2025 — Current |
| <b>coderslab.cz</b> <a href="#">↗</a> , Educator                         | 2024 — Current |
| <b>doucuji.eu</b> <a href="#">↗</a> , Statistics and Data Analysis Tutor | 2022 — Current |
| <b>nutit.cz</b> <a href="#">↗</a> , Data Engineer                        | 2023           |
| <b>mojestatistika.cz</b> <a href="#">↗</a> , Statistician                | 2022           |

## Education

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| <b>M.Sc. Prague University of Economics and Business</b> , Statistics  | Sep 2022 — Jun 2025 |
| <ul style="list-style-type: none"><li>• Minor in Econometrics.</li><li>• <a href="#">Bayesian analysis of time-varying volatility models</a> <a href="#">↗</a></li></ul>   |                     |
| <b>B.Sc. Prague University of Economics and Business</b> , Data Analytics  | Sep 2021 — Jan 2025 |
| <ul style="list-style-type: none"><li>• Graduated with honors.</li><li>• <a href="#">Estimating the relative frequency of a binomial distribution using classical and Bayesian approaches in R</a> <a href="#">↗</a></li></ul> |                     |
| <b>B.Sc. Prague University of Economics and Business</b> , Applied Informatics   | Sep 2019 — Jun 2022 |
| <ul style="list-style-type: none"><li>• <a href="#">Logistic models in esports</a> <a href="#">↗</a></li></ul>   |                     |

## Publications

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Hradilek, P., et al. (2023). *Is breastfeeding in MS harmful or not? An answer from real-world Czech data. Multiple Sclerosis and Related Disorders*, 76, 104790.

Aug 2023

[10.1016/j.msard.2023.104790](https://doi.org/10.1016/j.msard.2023.104790) 

Stastna, D., et al. (2024). *The Czech National MS Registry (ReMuS): Data trends in multiple sclerosis patients whose first disease-modifying therapies were initiated from 2013 to 2021. Biomedical Papers*, 168(3), 262–270.

April 2023

[10.5507/bp.2023.015](https://doi.org/10.5507/bp.2023.015) 

## Key Projects

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### MŠMT Data Exploration Application

MŠMT

- Developed an **R Shiny** application for exploring 10,000+ variables offered by the ministry.
- Implemented custom filtering, hierarchical aggregation, and multi-format data export capabilities.
- Optimized data-heavy operations using **Polars** and **asynchronous programming**.

### Time-Series Feature Engineering Pipeline

Rohlik Skillz s.r.o

- Designed and implemented automated feature engineering for time-series forecasting models.
- Enhanced model performance through systematic identification of data quality issues.
- Integrated machine learning pipeline with production systems using Python and SQL.

### Treatment Switch Analysis Platform

ReMuS

- Statistically analyzed treatment switches among ~ **19,000 patients across 17 treatments** over four years.
- Generated comprehensive Excel reports describing patient treatment histories.
- Created custom Sankey diagrams visualizing treatment progression patterns.

## Technologies

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**R Language:** Tidyverse, Tidymodels, Shiny, Quarto, R Markdown...

**Python:** Polars, pandas, numpy, scikit-learn, statsmodels, FastAPI, MLflow, PySpark...

**Data & Cloud:** SQL, Docker, Git, Google Cloud Platform, Keboola, Linux...

**Visualization:** PowerBI, Tableau, ggplot2, plotly..