Polyna German

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EDUCATION

University of Toronto   Toronto, ON
Honors Bachelor of Computer Science and Economics, minor in Statistics   Class of 2027
Relevant Coursework: OOP, Linear Algebra, Mathematical Analysis, Multivariable Calculus, Microeconomics, Macroeconomics, Data Analysis, Data Science, Big Data tools for Economists, Software Design, Statistics, Theory of Computation, Modern Symbolic Logic, Computer Vision, Computer Organization, Applied Econometrics

WORK EXPERIENCE

Canadian Economics Association   Toronto, Canada
Research Assistant   April 2025 - Present
- Collected and analyzed faculty and graduate student data from Canadian university economics departments.
- Used ChatGPT and recent academic methods to infer demographic information (gender and race) from names.
- Presented analytical findings to supervisors and research teams, tailoring communication to non-technical audiences.

Department of Economics UofT   Toronto, Canada
Research Assistant   April 2025 - Present
- Designed and developed an interactive web platform for teaching microeconomics, incorporating dynamic graphs and visualizations to enhance student learning and engagement.
- Maintained and improved site functionality using JavaScript, Python, HTML, and CSS, ensuring usability, responsiveness, and reliable data integration.
- Conducted literature reviews to synthesize academic research and support the project's theoretical and pedagogical framework.
- Merged multiple institutional datasets and implemented optimized data-processing workflows, increasing address-matching and data-merging efficiency by approximately 30%.

Gexateq   Minsk, Belarus
Software Engineer   July 2024 – September 2024
- Developed the backend of a banking application using FastAPI for services, SQLAlchemy for database interactions, and PostgreSQL for data management.
- Managed containerization with Docker, orchestrated services with Docker Compose, and handled database migrations using Alembic, Celery for task scheduling.
- Utilized Git for version control, DBeaver for database management, pytest for unit testing, and Poetry for virtual environments.

PROJECTS

Boom vs Bust: The Impact of Economic Cycles on Patent Litigations   January 2025 – April 2025
- Aggregated and analyzed court case durations, correlating them with economic indicators like GDP, education levels, and personal income using Python (Pandas, NumPy, Matplotlib, Seaborn, Sklearn).
- Utilized machine learning techniques (Regression Tree, Bagging, and Random Forest) to analyze the impact of economic cycles on patent litigation trends, and integrated data via an API, web-scraping.

Spydle Game   October 2024 - December 2024
- Developed the frontend of a multiplayer word game using Swing and assisted in transitioning to React for improved UI/UX.
- Utilized Spring Boot for backend integration and real-time gameplay features.

Conflict escalation prediction December 2023

- Utilized XGBoost, Transformer, and FeedForward Neural Network models to analyze factors contributing to conflict escalation and compared their performance.
- Identified key factors influencing conflicts and recommended the most suitable model for accurate predictions based on analysis.

SKILLS

Programming Languages: Python, Java, CSS, HTML, R, SQL, JavaScript

Technologies & Tools: REST API, SQLAlchemy, Docker, docker-compose, Spring Framework, Swing, React, PostgreSQL, Power BI, Alembic, Git, DBeaver, NumPy, Pandas, Matplotlib, Seaborn, Jupyter Notebook, Matplotlib, Redis, Celery, Poetry, Microsoft Suite, VSCode, JetBrains Toolbox.

Languages Spoken: English, Belarusian, Russian, Polish