ALICE MEDVEDEV

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SUMMARY

Research mathematician with data science experience seeks a full- or part-time data science role.
Ready to explore and clean raw data, and to produce dashboards and visualizations.
Learning about and eager to work with machine learning and statistical modeling.

KEY SKILLS

- **Python** - NumPy, pandas; Plotly, Matplotlib; PySpark
- **SQL** - SQLite, PostgreSQL, Redshift SQL
- **Machine learning** - scikit-learn, TensorFlow
- **Excel** - pivot tables, VBA
- **Front end** - HTML, CSS, JavaScript

- **Quantitative reasoning and problem solving**
    - Published research in top journals including *Annals of Mathematics.*
- **Technical writing and editing**
    - Wrote hundreds of pages of research papers, teaching materials, grant proposals.
- **Public speaking**
    - Prepared and delivered dozens of invited conference presentations.
    - Designed and taught over 2,000 hours of university mathematics courses.

DATA SCIENCE EXPERIENCE

- **Data Scientist**   SignalFox   2021 – 2022
    - Designed and coded **business analytics dashboards** within existing Plotly JavaScript code.
    - Designed, coded, and tested complex **SQL** queries (**Redshift SQL** and **PostgreSQL**) within existing query-building Python code.
    - Explored raw client data with **SQL**, **Excel**, and **pandas** to identify gaps and inconsistencies.

DATA SCIENCE PROJECTS

- **Twitter data mining**: built a **Python** data pipeline to extract and clean data from **JSON** files produced by a scraper, and load the clean data into an **SQLite** database.

- **QA/troubleshooting**: in accounting software used by major banks, replicated and characterized client-reported problems, from incorrect computations to database-corrupting crashes, via their **Excel** user interface.

- **Weather describer**:

    - built a **website** that provides the **typical weather** for a user-entered location and date period: for example, "40% of the days will be hot, 45% warm, and 15% cold" (**Flask** connects **Python/pandas** back-end to **JavaScript/Plotly** front-end)

    - built a **machine learning** pipeline to estimate **seasons** for a user-entered location, eurocentric winter-sprint-summer-fall aren't right for much of the world (ensemble of **k-means clustering** models with creative pre- and post-procesing)

DATA SCIENCE TRAINING

- **UC Berkeley Extension Data Analytics and Visualization Boot Camp**   2022

- **MIT Statistics and Data Science MicroMasters (edX)**, in progress

- **Caltech Computer Science** Courses: (C, C++, Java, Scheme)
    Introduction to Programming, Data Structures, Object-Oriented Programming.

MATHEMATICS RESEARCH CAREER

Doctoral Faculty	CUNY Graduate Center	2016 – 2020
Assistant Professor of Mathematics (tenure-track)	City College of New York	2013 – 2020
Visiting Assistant Professor (post-doc)	UC Berkeley	2010 – 2013
Research Assistant Professor (post-doc)	University of Illinois Chicago	2007 – 2010

EDUCATION

Ph.D. in Mathematics	UC Berkeley	2007
B.S. in Mathematics	California Institute of Technology	2001

RESEARCH HIGHLIGHTS

- *Invariant varieties for polynomial dynamical systems*
    97-page research paper in *Annals of Mathematics*, a top journal;
    with Prof. Thomas Scanlon (UC Berkeley); this is Scanlon's most-cited paper.
- NSF research grant "*Model Theory and Difference Algebra*"