ROSHAN PRIZAK, PhD
DATA SCIENTIST

+49 163 9078036
Karlsruhe | Vienna
roshanprizak@gmail.com
roshanprizak.com

https://www.linkedin.com/in/roshan-prizak-05a185254/
https://github.com/roshanprizak/

About me

Skilled data scientist with 9+ years experience in data analysis, modeling, visualization, machine learning, research paper writing and collaborative research projects. Postdoc at KIT, alumni of IST Austria (PhD) and IIT Bombay (B. Tech and M. Tech). Strong quantitative background in pure and applied mathematics, statistics, data analysis, and computer science. Driven to learn new tools and concepts, actively building an independent data science portfolio on real-world problems.

General Skills

Data scraping · Data cleaning · Data mining · Data modeling · Data visualization · Machine learning · Statistical analysis · Regression analysis · NLP · Unsupervised learning · Supervised learning · Deep learning · Markov Chain Monte Carlo

Technical Skills

Programming/libraries:
Python, scikit-learn, Tensorflow, matplotlib, geopandas, SQL, Bash, R Programming, R Markdown, R Shiny, ggplot2, MATLAB, C++, D3.js, HTML, CSS, Javascript, Vue.js, Quasar, Leaflet

Other software/tools:
Firebase, Node.js, AWS, Canva, GitHub, git, LaTeX, conda, Docker

Soft Skills

- Collaboration
- Communication
- Multi-tasking
- Leadership
- Decision-making
- Critical thinking
- Quick learner
- Out-of-box thinking

Data Science Projects

How accessible is Vienna's public transport? 🔗

- Built dataset of closest public transport by type and distance using GTFS feeds and a local Docker-based installation of openrouteservice
- Deployed on AWS an R Shiny interactive app to visualize transport access
- Next, using routing and real-time info, quantify first-mile and last-mile connectivity, robustness to cancellations, redundancy and other metrics

What do World Health Assembly resolutions deal with? 🔗

- Scraped, cleaned and created a dataset of WHA resolutions from 1948-2022
- NLP topic analysis, clustering by topics, time evolution and network analysis of WHA resolutions, time evolution of country contributions to WHO budget

Gender differences in Indian cinema from 1940-2023 🔗

- Scraped, cleaned and created a dataset of Bollywood and Telugu movies
- Interactive visualizations of actor-actress age gaps and marriage vs career
- NLP analysis of plot summaries to identify differences in descriptions of male and female roles, actors and actresses, and the actions they take
- Quantification of screen time by face recognition of lead actor and lead actress in movie frames using cv2, dlib and clustering algorithms

Looking at cricket through numbers 🔗

- Extracted ball-by-ball details and prepared a clean dataset - batter, bowler, fielding, events, commentary - from ESPNCricinfo, ICC and other sources
- Developed ML models to predict shot played by batter from text commentary using supervised learning methods in scikit-learn
- Which batters and bowlers in the IPL over the years have contributed to their team's winning chances and how?
- Translate qualitative questions about player strategies, performances, umpire biases, team predictions etc. into quantitative insights

Positions

Karlsruhe Institute of Technology
Postdoctoral scientist *Mar 2019 – Present*

Key responsibilities:
- **Image and data analysis** of complex microscopy datasets
- Bioinformatics analysis of **large-scale genomic data**
- **Physical modeling** and polymer simulations of chromatin, followed by **data analysis** of **simulation output data** in Python
- Worked as part of multiple research teams, contributed to various projects and **co-wrote published research papers**
- Supervised students, **taught R** and **Python** to Master's and PhD students

ROSHAN PRIZAK, PhD
DATA SCIENTIST

+49 163 9078036
Karlsruhe | Vienna
roshanprizak@gmail.com
roshanprizak.com

https://www.linkedin.com/in/roshan-prizak-05a185254/
https://github.com/roshanprizak/

Teaching

Data Analysis, Statistics and R
as part of Chemomics and Phenomics
Instructor (MFOR-3209, KIT, 2022)
Instructor (MFOR-3209, KIT, 2021)

Making graphs with Python
as part of Python Applications
Instructor (BIF-IGS course, KIT, 2023)
Instructor (BIF-IGS course, KIT, 2022)

Selected Topics in Biophysics
Teaching Assistant (IST Austria, 2014)

Network Theory (EE 224)
Teaching Assistant (IIT Bombay, 2012)

Courses

- Data analysis
- Statistical physics
- Statistics
- Biophysics
- Bioinformatics
- Core electrical engineering
- Pure and applied math (number theory, real and complex analysis, linear algebra, DDEs, PDEs, probability theory, optimization, Markov processes, Markov chains)
- Machine learning and AI
- Systems and networks

Languages

Fluent/native

English   Telugu   Hindi

A2+   **A1+**

German   Spanish
Tamil   Kannada
Malayalam

Austria Model World Health Organization
Vice-President *Aug 2022 – Present*

Key responsibilities:
- **Co-organised** simulations of the World Health Assembly
- **Designed** and **deployed website** at austriamodelwho.org
- **Co-wrote theme guides** for Austria Model WHO simulations
  - Energy Security and Health (October 2022)
  - Climate Change and Health (April 2023)
- Admin roles - **delegate training** during simulations, **dissemination material design**

Education Background

Institute of Science and Technology Austria
PhD student *Sept 2013 – Dec 2018*

Bioinformatics, biophysics, evolutionary theory

`Deep learning` `Machine learning` `Data modeling`
`Statistical analysis` `Hypothesis testing` `Clustering` `R Programming`
`MATLAB` `Markov chains` `Markov processes` `Markov Chain Monte Carlo`

Indian Institute of Technology Bombay (GPA 8.63/10)
Master of Technology
Bachelor of Technology *July 2008 – Aug 2013*

Electrical Engineering (Communication & Signal Processing)

`Statistical analysis` `Probability theory` `Control theory` `Systems theory`
`Network theory` `Computer science` `Fourier transforms`

Internships

IST Austria, Klosterneuburg, Austria	*May 2012 – July 2012*
University of Surrey, UK	*May 2011 – July 2011*
JNCASR, Bangalore, India	*May 2010 – July 2010*

Awards and honours

Heinz Scholarship for graduate education (IST Austria, 2013 - 2016)
Rajiv Gandhi Science Talent Research Fellow (Bangalore, 2010 - 2011)
CBSE Merit Scholarship for undergraduate education (India, 2008 - 2010)
Ranked 125 out of 300,000 applicants in **IIT-JEE** (India, 2008)
Gold Medal, top 25 at **camp for International Chemistry Olympiad** (India, 2008)
Among **top 42** in the **Indian National Chemistry Olympiad** (India, 2008)
Top 1% in the **National Science Examination in Physics** (India, 2008)