Armin Kekić

Curriculum Vitæ

Experience

since 09/2018 **Applied Scientist**, Zalando SE, Pricing and Forecasting - Article Sales Forecast.
- Developing and deploying forecasters used for risk price optimisation and in-season stock management (re-order).
- Modelling sales and demand using Seq2Seq models (e.g. LSTMs, Transformer).
- Developing statistical methods to infer demand from stock-constrained sales time series.
- Numerical simulation of pricing process in order to find the right forecasting KPI as a proxy for profit made through price optimisation.

02 – 09/2018 **Applied Scientist**, Zalando SE, Pricing and Forecasting - Competitive and Strategic Pricing.
- Developing and deploying algorithmic pricing strategies for competitive price adaption and non-seasonal article discounting.
- Developed ROI-based competitive pricing strategy.
- Implemented an automated data-driven pricing algorithm for never-out-of-stock articles.

03/2017 – 01/2018 **Researcher**, *Physics of Networks*, Institute for Computer Science and Physical Institute, University of Heidelberg.
- Using methods from machine learning and network science to describe atomic spectra beyond the scope of quantum mechanics.
- Results are being prepared for publication.

02–04/2015 **Research Assistant**, *Quantum dynamics of atomic and molecular systems*, Physical Institute Heidelberg.
- Writing numerical solvers for quantum mechanical time evolution equations (Master equation) in Python.

07–09/2014 **Research Intern**, *Experimental foundations of quantum computing*, Centre for Quantum Technologies, National University of Singapore.
- Design of an optical experimental set-up for Rydberg-atom imaging using electromagnetically induced transparency (EIT).

Programming and Software Skills

Working knowledge: Python (Scipy, Numpy, Pandas, PyTorch, Keras, Tensorflow, Scikit-learn, Matplotlib, NetworkX), SQL, Matlab, Octave, Git, LaTeX.

Intermediate: R, PySpark, C++, Databricks, Mathematica.

Basic: Docker, AWS (S3, EC2, EMR), Kubernetes, Sagemaker.

Education

2016–2017 **Master Studies Physics**, École Normale Supérieure, Paris.
- Focus areas: quantum dynamics, statistical mechanics.

2015–2016 **M.Sc. Mathematical Modelling and Scientific Computing**, University of Oxford, St Hugh's College.

- Focus areas: numerical and analytical solution of differential equations, network theory, machine learning.
- Master thesis: Numerical simulation of composite granular chains for shock attenuation. Wrote entire simulation software (Python). Supervisor: Robert A. Van Gorder.

2011–2015 **B.Sc. Physics**, University of Heidelberg.

- Focus areas: quantum dynamics, numerical simulation of physical systems.
- Bachelor thesis: Theoretical investigation (computer simulation and mathematical modelling) of the Rydberg-atom excitation process used in cold-atoms experiments. Supervisor: Adrien Signoles and Matthias Weidemüller.

2013–2014 **ERASMUS Exchange Year**, University of Birmingham, UK.

- Focus areas: financial mathematics, economics.

Scholarships

2016–2017 Scholarship awarded by École Normale Supérieure.

2016 Scholarship awarded by the Barbinder Watson Trust Fund, St Hugh's College, Oxford for a summer workshop in applied mathematics at Universidad Complutense de Madrid.

2014 RISE-worldwide scholarship awarded by the German Academic Exchange Service (DAAD).

2012-2017 Full scholarship by the German National Academic Foundation (Studienstiftung des deutschen Volkes).

Publications

2020 **A Network Approach to Atomic Spectra**,
Currently in Preparation.

2018 **Wave propagation across interfaces induced by different interaction exponents in ordered and disordered Hertz-like granular chains**, *Master Thesis Results*, `https://doi.org/10.1016/j.physd.2018.07.007`.

2016 **Interaction Enhanced Imaging of Rydberg P states**, *Bachelor Thesis Results*, `https://doi.org/10.1140/epjst/e2015-50339-8`.

Languages

German **native speaker**

English **full professional proficiency** *TOEFL iBT 112/120*

Bosnian **fluent**

French **basic knowledge**