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Aleksandr (Sasha) Podkopaev

Experience

Jan 2025 – Now **Amazon Web Services (CloudWatch)**, Senior Applied Scientist (III), Santa Clara, CA.
Working on Amazon Q Developer operational investigations, an AI-powered assistant for automated responding to incidents in cloud-based applications (root-cause analysis, LLMs, calibration of uncertainty estimates).

Sep 2023 – Jan 2025 **Walmart Global Tech (AdTech)**, Senior Data Scientist, Sunnyvale, CA.
Working on forecasting (online ML predictions with uncertainty estimation; training/fine-tuning of NLP models) and measurement (model-based ad revenue attribution) tools in AdTech. Interviewed multiple DS candidates.

Summer 2022 **Amazon Web Services (Causality)**, Research Intern, Santa Clara, CA.
Developed a sequential nonparametric independence test for general data streams that enables continuous data monitoring while maintaining validity and is provably consistent.

Summer 2020 **Google (Chrome)**, Data Science Intern, Pittsburgh, PA (Remote).
Analyzed experimentation pipeline and identified issues arising due to heavy-tailed data. Used simulation techniques to provide insights into the existing flaws. Proposed potential enhancements of the pipeline.

Summer 2017 **S7**, Intern, Moscow, Russia.
Demand forecasting for supply chain and inventory optimization.

Education

2018 – 2023 **PhD in Statistics & Machine Learning**, *Carnegie Mellon University*, GPA: 4.1 / 4.0.
Thesis: "Uncertainty Quantification under Distribution Shifts". Committee: Aaditya Ramdas (advisor), Alessandro Rinaldo, Zachary Chase Lipton, Rina Foygel Barber, Shiva Kasiviswanathan. Link:
Relevant coursework: statistics, statistical computing, convex optimization, machine learning, deep learning.

2016 – 2018 **MSc in Applied Mathematics & Computer Science**, *Skolkovo Institute of Science and Technology, Moscow Institute of Physics and Technology (joint program)*, GPA: 5.0 / 5.0.

2012 – 2016 **BSc in Applied Mathematics & Physics**, *Moscow Institute of Physics and Technology*, GPA: 4.9 / 5.0.

Research

Interests Algorithms & theory for nonparametric statistical inference, assumption-light predictive uncertainty quantification (conformal prediction, calibration), valid inference under distribution shifts and online settings.

Invited speaker Sequential two-sample and independence testing (ISSI and HSE; link:), predictive uncertainty quantification under distribution shifts (JSM and ICSA), testing distribution shifts (Royal Bank of Canada).

Publications

ICML '24 **AP**, D. Xu, K.C. Lee "Adaptive conformal inference by betting".

NeurIPS '23 **AP**, A. Ramdas "Sequential predictive two-sample and independence testing".

ICML '23 **AP**, P. Blöbaum, S. Kasiviswanathan, A. Ramdas "Sequential kernelized independence testing".

ICLR '22 **AP**, A. Ramdas "Tracking the risk of a deployed model and detecting harmful distribution shifts".

UAI '21 **AP**, A. Ramdas "Uncertainty quantification for classification under label shift" (longer oral).

NeurIPS '20 C. Gupta*, **AP***, A. Ramdas "Distribution-free binary classification: prediction sets, confidence intervals and calibration" (spotlight; **equal contribution*).

Skills

Languages Python (preferred), R.

Tools Scikit-learn, Pandas, Matplotlib, PyTorch, Tensorflow, PySpark, LaTeX, Git/Github.

Certifications Coursera NLP Specialization.

Service

Reviewer NeurIPS (top 10% in 2023), ICLR, ICML, JMLR.

TA Graduate-level classes at CMU & Skoltech (intermediate & advanced statistics, convex optimization).

Social Department committees (retreat, open house) at CMU.