

# Jurijs Nazarovs

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## RESEARCH EXPERIENCE

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### Microsoft Research (MSR) Internship

May 2021 - August 2021

Developing temporal probabilistic deep learning methods for defensive cyber domain. Paper in progress.

### NEC Labs America, Research Internship

May 2020 - August 2020

Proposed a new triplet-based loss function and a framework for ordinal time series classification problem robust against missing labels. Submitted first author paper.

### UW - Madison, Research Assistant to Professor Vikas Singh

2019 - Present

Focus on statistical and computational aspects of temporal problems (in vision) and deep probabilistic models, such as Bayesian Neural Networks and Neural Stochastic Differential Equations.

### UW - Madison, Research Assistant to Professor Sunduz Keles

2016 - 2018

High throughput computing framework

- Developed high throughput framework based on HTCondor for managing pipelines, ParDim ([GitHub](#)).
- Contributed to the analysis of ChIP-Seq experiments ([GitHub](#)) and acknowledged by Nature paper, [Expanded encyclopaedias of DNA elements in the human and mouse genomes](#).

## Publications

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**[A Variational Approximation for Analyzing the Dynamics of Panel data](#)**, UAI 2021 (26% acceptance rate). Proposed the Mixed-Effect Neural ODE model and the new ELBO-based loss, which allows to model uncertainty similar to SDE, but use ODE solvers.

**[Graph Reparameterization for enabling 1000+ Monte Carlo Iterations in Bayesian Deep Neural Networks](#)**, UAI 2021 (26% acceptance rate). Proposed a new framework to construct an MC estimator for the KL term, which significantly decreases GPU memory needed to run VI version of Bayesian Neural networks and improves runtime. Memory savings allow us to run up to 1000 or more MC iterations on a single GPU.

**Statistical testing and estimating  $p$ -values from Uncertainty Maps in Vision.** Submitted.

**Probabilistic deep learning methods for defensive cyber domain.** Work in progress.

**Ordinal Quadruplet: Retrieval of Missing Labels in Ordinal Time Series.** Submitted.

## EDUCATION

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**University of Wisconsin - Madison**, Madison, WI  
PhD, Statistics

2016 - 2022 [Expected]

**University of Wisconsin - Madison**, Madison, WI  
Master of Science, Computer Science

2019 - 2020

**Duke University**, Durham, NC  
Master of Arts, Economics

2014-2016

**Higher School of Economics**, Moscow, Russia  
Bachelor of Science, Applied Mathematics and Computer Science

2010-2014

## SKILLS

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Machine Learning, Deep Learning, Bayesian Neural Networks, Temporal Analysis, Computer Vision

*Programming:* Python (PyTorch, TensorFlow), R, bash, Matlab, Java, C++