JULIA KOSTIN

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EDUCATION

Technical University of Munich   Oct 2020 - Present
TopMath: Elite Master's and Doctoral Programme in Mathematics (Current grade 1.0/1.0)
Research-oriented fast-track graduate program including 15 ECTS in independent research
Relevant coursework: Stochastic Processes, Gaussian Processes in Machine Learning, Deep Learning, Foundations of Data Analysis, Mathematical Statistics, Introduction to Digital Signal Processing
Master's thesis (ongoing): Robustness Guarantees for Low-rank Matrix Recovery with Adversarial Noise

Ludwig Maximilian University of Munich
BSc Mathematics (Final grade: 1.0/1.0)   Oct 2017 - Aug 2020
Bachelor's thesis: Construction of Orthonormal Wavelet Systems (with Prof. Peter Müller)
Minor subject (30 ECTS): Biology
BSc Biology   Oct 2016 - Oct 2017
Focus on dynamical systems and computational neuroscience. Transferred to BSc in Mathematics in 2017

Studienkolleg Munich   Sep 2015 - Jul 2016
Grade: 1.0/1.0
Completion of secondary school education for international applicants coming from a shorter school system

Gymnasium Nr. 1583   Sep 2009 - Jul 2015
Grade: 5.0/5.0   Moscow, Russia
Secondary school education

PROFESSIONAL EXPERIENCE

Technical University of Munich   Munich, Germany
Research Assistant   Jul 2022 - Present
• Conducted research on **robustness of inverse problems** under adversarial noise under supervision of **Prof. Felix Krahmer**
• **Developed improved bounds** for the reconstruction error of low-rank matrices under adversarial noise
• Coauthor of preliminary results presented at the conference **Mathematics of Complex Data** in Stockholm
• Part of the DFG-funded Priority Program **Theoretical Foundations of Deep Learning** (FoDL)
• Member of the **Munich Center for Machine Learning** (MCML)

Fraunhofer Institute for Integrated Circuits IIS   Erlangen, Germany
Student Researcher   Nov 2020 - Jun 2022
• Worked in a team of three on **neural network models for speech extraction** under supervision of **Prof. Emanuël Habets**
• Adapted and trained DNNs for **brain-informed speaker extraction** on **electroencephalography data** in PyTorch
• Implemented EEG-driven classifiers of talker identity and speech direction in Python and MATLAB
• Coauthor of the talk "Decoding attended talker solely from listening-state EEG signals" presented at the **VoiceID 2022** conference in Zurich

LMU Mathematical Institute   Munich, Germany
Tutor in Advanced Calculus, Measure Theory and Integration   Apr 2019 - Aug 2020
• Taught weekly classes, developed solutions to problem sheets, graded assignments and exams over 3 semesters

Bernstein Center for Computational Neuroscience   Munich, Germany
Student Researcher   Sep 2017 - Oct 2018
• Conducted research on neural mechanisms of spatial orientation in a team of two under supervision of **Prof. Andreas Herz**
• Investigated the role of bursts in grid cell spike trains using generalized linear models
• Performed data analysis of spike trains and grid cell firing fields in Python and MATLAB

CONFERENCE TALKS AND POSTERS

KU-LMU-TUM Joint Seminar on Mathematics of Data Science   Munich, Germany
• Presented results in the talk "Robustness Guarantees for Blind Deconvolution via Nuclear Norm Minimization"   Nov 2022

Approximation and Geometry in High Dimensions 2022   Bedlewo, Poland
• Presented results in the talk "Robustness Guarantees for Low-rank Matrix Recovery with Adversarial Noise"   Oct 2022

Bernstein Conference for Computational Neuroscience 2018   Berlin, Germany
• Poster "Differentiating Temporal Aspects of Grid-Cell Activity with Generalized Linear Models"   Sep 2018

2017 Amgen Scholars Europe Symposium   Cambridge, UK
- Poster "Exploring Grid Cell Spiking with a Generalized Linear Model"   Sep 2017

PROJECTS AND SUMMER SCHOOLS

Lisbon Machine Learning School 2022   Lisbon, Portugal
- Completed assignments, participated in discussions on natural language processing, sequence models and causality   Jul 2022

Science Hack 2021   Munich, Germany
- Infineon Radar Challenge: Developed best-performing traffic object classifier from radar data in a team of 5   Apr 2021

Utrecht Summer School on Dynamical Systems   Utrecht, Netherlands
- Completed a MATLAB simulation of delay differential equations in a team of two   Jul 2019

Amgen Scholars Programme   Munich, Germany / Cambridge, UK
Research Intern in Computational Neuroscience   Jun 2017 - Sep 2017
- Modelled stochastic behavior of space-modulated neurons in Python and MATLAB
- Mentor of the 2022 Munich Amgen cohort

SKILLS

Programming experience	Python (incl. PyTorch, Tensorflow), MATLAB, R, C++
Languages	German (native), English (TOEFL iBT 120/120), Russian (native)

AWARDS

Max Weber Scholarship for gifted students   Apr 2018 - present
- Received financial and educational support based on academic merit and extracurricular activities
- Co-organized the Mathematical Symposium for scholars and mentors
- Participated in multiple soft skill seminars and summer schools, including "Multivariate Approximation with Radial Basis Functions"

Russian Student Olympiad   2015
- First Prize in German Language, Second Prize in Biology in the final round

VOLUNTEERING

Corona School e.V.   Sep 2020 - Apr 2021
- Tutored students from disadvantaged backgrounds during the online school period of the coronavirus pandemic

Peer-to-Peer Mentoring LMU   Nov 2020 - Apr 2021
- Assisted three first semester students in mathematics with their start at university