

Imahn Shekhzadeh

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Education

Oct 2023 – Graduate Researcher & CS PhD Candidate, University of Geneva.

Present

Oct 2020 - M.Sc. Physics, University of Hamburg. GPA: 1.13.

Sep 2022

Workshop

2017 – 2021 B.Sc. Physics, University of Hamburg. GPA: 1.49.

2009 – 2017 A-studies, Margaretha-Rothe-Gymnasium, Hamburg. GPA: 1.00.

Honors and Scholarships

2017 – Present Member of the Hamburg Mathematical Society (German Mathematische

Gesellschaft in Hamburg).

2018 - Sep Scholarship by the German Academic Scholarship Foundation (German

2022 Studienstiftung des deutschen Volkes) for my B.Sc. & M.Sc. in Physics.

Publications

NeurIPS 2023 Calibrating Neural Simulation-Based Inference with Differentiable Coverage

Probability (Maciej Falkiewicz*, Naoya Takeishi*, **Imahn Shekhzadeh***,

Antoine Wehenkel, Arnaud Delaunoy, Gilles Louppe, Alexandros Kalousis)

Journal of L2LFlows: generating high-fidelity 3D calorimeter images (Sascha Diefen-Instrumentation bacher, Engin Eren, Frank Gaede, Gregor Kasieczka, Claudius Krause*,

2023 Imahn Shekhzadeh*, David Shih)

NeurIPS 2023 Advancing Generative Modelling of Calorimeter Showers on Three Frontiers

ML4Science (Erik Buhmann, Sascha Diefenbacher, Engin Eren, Frank Gaede, Gregor

Kasieczka, William Korcari, Anatolii Korol, Claudius Krause, Katja Krüger,

Peter McKeown, **Imahn Shekhzadeh**, David Shih)

(* equal contribution)

Work Experience

Oct 2022 – **Teaching Assistant**, University of Applied Sciences Western Switzerland.

Present Courses: Machine Learning (Fall 2022 & 2023), Statistics for Machine Learning

(Spring 2023)

Spring – Light & Schools, Universität Hamburg

Summer 2018 (Co-)Supervision of school classes for teaching particular physics or computing

applications, such as diffraction of light, app development, etc.

(https://www.min.uni-hamburg.de/min-schulportal/

light-and-schools.html).

2013 – 2017 Margaretha-Rothe-Gymnasium, Hamburg

Tutoring of students in Mathematics, Physics and Latin.

Skills

Programming languages

Proficient in: Python (PyTorch, TensorFlow, NumPy, matplotlib, scikit-learn, etc.)

Familiar with: Java Basics: C/C++

Software

Linux, Slurm, HTCondor, LATEX, Microsoft Office (all very good), git (experienced)

Languages

German (native), English (fluent), Farsi/Dari (fluent), Latin (Latinum)

Further Projects

Nov 22 – Present MIGRATE (A Multidisciplinary and InteGRated Approach for geoThermal Exploration), collaborators: Alexandros Kalousis, Riccardo Lanari, Matteo Lupi, Konstantinos Michailos, Juan Luis Porras Loría, Domenico Montanari, Samuele Papeschi, Gurjeet Singh. In an interdisciplinary project, we are studying the automatization of the workflow of ambient noise tomography (ANT) data. This is relevant, since ANT is used for the exploration of geothermal energy, which is a resource potentially available anywhere and at any time. The current ANT workflow, however, heavily relies on simplified assumptions, and the amount of data poses a computational strain, which is where ML methods can help.

ML Lecture Project Apr – Jul 21 Music Genre Recognition, supervised by: Prof. Christina Brandt. In the Master lecture "Machine Learning", I worked with two other students on music genre recognition, i.e. the classification of a music genre from raw audio data. We used both convolutional and recurrent neural networks and preprocessed the audio files into Mel spectograms, which are visual representations of sound. Code: https://gitlab.com/Imahn/music-genre-recognition.

Carouge, December 07 2022