

Matias Britez

Hirschberger Strasse 64 · 53119 Bonn · Germany · saikatroy@uni-bonn.de · (+49)-16283-19605

OBJECTIVE

An experienced machine learning (ML) researcher with extensive academic, practical knowledge and high-impact publications. Specialization in Deep Learning (DL) for classification & segmentation, with extensive understanding of architectural and training paradigms. Actively looking for opportunities as a ML/DL researcher or Data Scientist.

EDUCATION

University of Bonn

Master of Science, Computer Science (Intelligent Systems)

– Thesis: *Fully-3D Deep CNNs for Segmentation of Neuroanatomy*

Bonn, Germany

2017–2020

Jadavpur University

Master of Engineering, Software Engineering

– Thesis: *Supervised-Layerwise Training of Deep CNNs for Classification*

Kolkata, India

2013–2015

WORK EXPERIENCE



German Center for Neurodegenerative Diseases (DZNE)

Research Assistant, Image Analysis Group

- Led the development of optimized 3D CNN blocks for full-volume neuroanatomical segmentation through efficient reparameterization
- Developed architectures for optimized memory-usage during training to promote model reusability in semantic segmentation in medical imaging

Bonn, Germany

2018–2020

Jadavpur University

Junior Research Fellow, Dept. of Computer Science & Engg.

- Applied recurrent neural networks and classical time series analysis algorithms to the problem of appliance energy usage prediction
- Implemented distributed gradient descent algorithms by developing a PySpark wrapper for a Keras and Flask framework

Kolkata, India

2016–2017

Indian Statistical Institute

Project Trainee (Intern), Computer Vision and Pattern Recognition Unit

- Developed supervised-layerwise deep CNNs for document classification on limited data

Kolkata, India

2015–2016

SKILLS

Technical Proficiency

- **Proficient:** Python, NumPy, Scikit-Learn, PyTorch, Git, \LaTeX , Matplotlib
- **Familiar:** Linux (Usage and Shell Scripting), C, SciPy, R, SQL, Apache Spark, Matlab, Keras, Pandas, Docker

Relevant Courses

- Machine Learning, Technical Neural Networks, Data Science & Big Data, Distributed Big Data Analytics, Data Analytics and Visualization, Knowledge Graph Analysis, Deep Learning for Visual Recognition, Pattern Recognition, Deep Learning on GPUs, Advanced Deep Learning for Graphics

PUBLICATIONS (SELECTED)



- A. Das, **S. Roy**, U. Bhattacharya, S.K. Parui, “Document Image Classification with Intra-Domain Transfer Learning and Stacked Generalization of Deep Convolutional Neural Networks,” 24th *International Conference on Pattern Recognition (ICPR)*, Beijing, China, 2018.

- **S. Roy**, N. Das, M. Kundu, M. Nasipuri, “Handwritten Isolated Bangla Compound Character Recognition: A new benchmark using a novel deep learning approach,” *Pattern Recognition Letters, Elsevier*, Vol. 90, pp.15-21, 2017.
- **S. Roy**, A. Das, U. Bhattacharya, “Generalized Stacking of Layerwise-trained Deep Convolutional Neural Networks for Document Image Classification,” *23rd International Conference on Pattern Recognition (ICPR)*, Cancun, Mexico, 2016.

PROJECTS

GitHub

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- Implementation of **Autoencoders, GANs** (Advanced Deep Learning course)
 - **Deep CNNs** for Humanoid Robot Part Detection and Localization (Vision Systems lab)
 - Implementation of **Logistic Regression, MLPs, CNNs, VGGNets, ResNets, LSTMs, GRUs, Transfer Learning** based Nets (Vision Systems lab)
 - Scalable Evolutionary Algorithm for Association Rule Mining from Ontological Knowledge Bases using Apache Spark (Distributed Big Data lab)
 - **Deep Convolutional GAN** retraining on ImageNet-1k (Deep Learning lecture assignment)
 - Implementation of **Decision Trees and Rules, NN Classifiers, Ridge Regression** (Machine Learning course)
 - **Deep CNN-LSTM** Networks for Electric Load and Wind Power Forecasting
 - Supervised Layerwise training of **Deep CNNs** for Character and Document Recognition

PROFESSIONAL SERVICE

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- Reviewer (Selected): ICPR (2018), *Language Resources and Evaluation*, Springer (2018), *Sadhana, Springer* (2019, 2020), *IEEE Access* (2019), *IET Information Security* (2020)

MISCELLEANEOUS

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- GATE Scholarship (2013–2015) for Postgraduate Studies, Govt. of India.
 - Erasmus Mundus FUSION Scholarship for PhD mobility between Jadavpur University, India and University of Evora, Portugal (Did not accept offer)