# tawsif

Research Blog | sleeping4cat@gmail.com | sleeping4cat.github.io

in sleepingcat4 | ♥ sleepingcat4 | ♥ sleeping4cat | ♥ sleeping4cat | ♥ tawsif ahmed | ♦ sleeping4cat OBJECTIVE

Computer Science researcher with six years of experience in artificial intelligence, scalable software engineering, computer networking, and project management. Seeking exciting and challenging projects.

## **EXPERIENCE**

• LAION AI [ June 10th, 2024 – Present

AI Researcher Hamburg, Germany

- Contributing to multiple research projects, including Bud-E, LAION RAG, Open Science Initiative, Big Video Dataset, and Alexandria.
- Engaged in AI research, machine learning engineering, and infrastructure development, collaborating with former Intel employees, Max Planck Institute for Intelligent Systems, TUM, and Oxford University students.
- Working closely with Robert Kaczmarczyk (TUM), Dr. Jenia Jitsev, Marianna Nezhurina, and Christoph Schumann on key initiatives.
- Co-authoring and publishing a paper on Project Alexandria with LAION Core members, including Ameya Prabhu (Oxford), Christoph Schumann, and others.

*July 25th, 2023 – December 10th, 2024*Nijmegen, Netherlands

- Started internship in Genzel Lab under the supervision of Prof. Lisa Genzel on Prof. Federico Stella's Project Path Analysis.
- Re-assigned to Prof. Paul's Neuroinformatics Project, working on creating 3D brain renders from 2.1 terabytes of data under the supervision of Prof. Paul and Prof. Lisa Genzel.
- Completed the research project and finished my work at Donders Institute in December 2024.

#### **EDUCATION**

• University of Bridgeport

Undergraduate in Computer Science

Class of 2029

CT, USA

#### ARXIV AND PUBLICATION

C=CONFERENCE, A=ARXIV, S=IN SUBMISSION, T=THESIS

[A.1] tawsif ahmed, et al. (2025). Project Alexandria: Towards Freeing Scientific Knowledge from Copyright Burdens via LLMs.

## **TECHNICAL SKILLS**

- Computer Languages: Python, C, Julia, Wolfram Mathematica, SQL, HTML, CSS, Scilab
- Hardware Experience: Intel Gaudi2, Intel XPU, Intel Xeon Data Centre processors, Nvidia T4, L100, 3090, A100, H100, Juelich Supercomputing Clusters, Supercomputing and Cluster experience
- Operating Systems: Windows, Linux (Ubuntu, Kali Linux, Tails)
- Tools: Keras, TensorFlow, PyTorch, JAX, Pennylane, SQLite, Chroma DB, Llama Index, Azure, Render Backend, Flask Backend, GCP, Heroku, CUDA, Docker, Accelerator
- Skills: Simulating Monte Carlo experiments, Mathematical calculations, Computer Vision (Image recognition, Classification, Object recognition, Landmark point recognition), GANs, Natural Language Processing, Embeddings, Flow-guard Chatbot (Rasa CALM), TTS, Sub-quadratic architecture, Restricted Boltzmann Machine, Deep Belief Framework, Quantum Machine Learning, Second-order optimization
- Optimization Techniques: Caching, Robust data structure design, Worst-case scenario-in-mind directed-designing, Big-O notation, Logarithmic design philosophy (Data structure + designing), Amortizing analysis
- Interests: Cryptography and Cipher Algorithms, Old English literature AI applications, Human-Machine Interface, Hopfield Neural Networks, Brain EEG-oriented GANs and reconstruction, High-performance trading
- Niche Fields: No-Code framework, Squarespace, APIs, Low-Code framework, Classical scripting and scraping

#### **FELLOWSHIP**

• Wolfram Summer School

Wolfram Mathematica

June, 2023 - July, 2023

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- I received full-scholarship (5000 USD) to attend and complete my fellowship in the Science and Technology track.
- I learnt and programmed extensively in Wolfram language and did a project under the guidance of Stephen Wolfram himself and advisor Maria Sargsyan.
- I wrote a paper on Analysing rare and NER words in Wikipedia. It was a project in the intersection of Linguistics and Artificial Intelligence. A proceeding paper is under-review at Wolfram Mathematica.

## **VOLUNTEER EXPERIENCE**

# • International Conference on Learning Representations

June, 2021 - June, 2022

*ICLR* 

• I worked as a volunteer engineer and helped organisers with helpdesk and setting-up zoom calls.

• I also worked as a website and infrastructure tester.

# • International Conference for Machine Learning ICML

*May*, 2021 - July 2021



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I worked as moderator for two Algorithm Orals

• Also, I helped authors with setting-up zoom calls and workshops.

## Conference on Neural Information Processing Systems

October, 2021 - December 2021

NeurIPS

I helped with zoom calls and workshops. Especially, NeurIPS workshop for Creativity



#### TALK AND PRESENTATION

• Under a minute February 2024

Neuromatch Academy

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 Delivered a lecture on "Finding short-term synaptic plasticity in Steinmetz dataset" at Neuromatch's Under a minute presentation program.

#### **COLLEGE CREDITS**

#### 4th Annual Conference on Disability in Healthcare and Medicine,

April 2023

Stanford Medicine, Stanford University

• Received 6.00 AMA PRA Category 1 Credit(s)TM for the live activity

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#### **SELF-STUDIED**

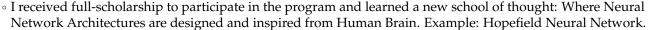
- 1. Introduction to Algorithms by Thomas H. Cormen
- 2. The Algorithm Design Manual by Stephen S. Skiena
- 3. Fluent Python by Luciano Ramalho
- 4. Quantum Computing: An Applied Approach by Jack D. Hidary
- 5. Programming Quantum Computers by Eric R. Johnston
- 6. Probabilistic Machine Learning: An Introduction by Kevin P. Murphy
- 7. Data Mining: Concepts and Techniques by Jiawei Han
- 8. Competitive Programming in Python by Christoph Dürr and Jill-Jênn Vie
- 9. Social Engineering: The Science of Human Hacking by Christopher Hadnagy (2018)

### SUMMER SCHOOL

• NeuroAI July, 2024 - July 2024

Neuromatch Academy

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• MLx Health, OxML June 2024 - July 2024

University of Oxford

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 Received acceptance and partial scholarship to attend both remotely and in-person. Unfortunately, schedule overlap prevented me from participate this year. Although, I was considered for an inviteonly opportunity to collaborate with NeurIPS authors for projects.

#### Computational Neuroscience

June 2023 - July 2023

Neuromatch Academy



- I received full-scholarship to participate in the program and learned Computational Neuroscience from fundamentals to advanced. Where I developed fire neuron models.
- Had developed a research project and showcased Infront of the TAs. Project titled: Identifying responsible brain
  regions for motor response upon stimuli cue encounter. I had led the project alongside Anya and calculated the
  response times and correlation between responses and brain regions from Steinmetz dataset and graphed the
  interconnected visuals to showcase our finding.

#### Synthetic Biology Camp

October 2022 - October 2022

Stanford University



 Attended Synthetic Biology Camp and learned the fundamentals-Computational Biology. Including modifying DNA and RNA using computers and how to run experiments.

## **ADDITIONAL INFORMATION**

# REFERENCES

# 1. Christoph Schumann

Founder, Operational Department LAION

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Phone: +49-176-22398086 Relationship: Lab Supervisor