Shigraf Salik

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Hello!

Shigraf Salik is an enthusiastic Computer Science student currently in the final year. He is a driven **Machine Learning and AI Engineer** focusing on Transformers, ViTs and quantization.

Technologies

Languages: HTML, CSS, C++, C, Java, SQL, JavaScript, Python, Rust

Libraries/Frameworks: PyTorch, TensorFlow, NumPy, Pandas, Matplotlib, Seaborn, Node.JS, Express.JS

Software: Microsoft SQL Server, Visual Studio Code, Jupyter Notebook

Tools: Git, MongoDB, Docker, Postman

Platforms: Windows, Ubuntu, Kali, Colab, Google Cloud, AWS, Arduino, Raspberry

Languages: English, Hindi, Urdu, Bengali, Arabic

Education

MAKAUT, B.Tech in Computer Science — Sept 2022 – May 2026

- **Coursework:** Computer Architecture, Artificial Intelligence, Comparison of Learning Algorithms, Computational Theory

Experience

Software Engineering Intern, SE Indian Railways – Kolkata, India — July 2025 – Present

- Worked with **Oracle Database** to update and optimize large-scale archival systems, significantly improving query speed and data retrieval performance.
- Gained hands-on experience in **database maintenance**, indexing, and tuning for legacy systems.
- Supported the **backup and recovery infrastructure**, learning enterprise-grade practices for data integrity and disaster recovery.
- Contributed to efforts in **scaling and securing the public-facing website**, including backend optimization, caching strategies, and basic security hardening (e.g., access control and protection against common web vulnerabilities).

Machine Learning Engineer, Heva AI – Kolkata, India — Oct 2024 – November 2024

- Worked with **time-series based EDF files** for epileptic patients.
- Implemented Vision Transformers aimed at EEG data such as MViT models.
- Analyzed EEG data using ViT, enhancing model accuracy and improving diagnostic capabilities for epileptic patients.
- **Optimized and quantized** the model for deployment over different types of hardware.
- Helped develop a robust infrastructure on **GCP**, streamlining data access and significantly reducing operational bottlenecks.

Student Campus Ambassador, Jurni.io – London, UK (Remote) — Oct 2023 – Nov 2023

- Coordinated events and **implemented outreach strategies** to increase the Jurni newsletter reader numbers by 200+ new readers.
- Recruited 10+ students for the Jurni team.
- Took part in the social media management team for Instagram handle.
- Spearheaded social media campaigns for Instagram, boosting follower engagement and amplifying brand visibility among target audience.

Open Source Contributions

Neuroinformatics Unit

Refactored kinematics.py *PR #583*

- Split `kinematics.py` into modular subpackage (`motion.py`, `navigation.py`, etc.) for better maintainability.
- Added functions to support IO for Parquet files in the movement package, enabling efficient reading and writing of pose tracking data compatible with the `animovement` R package and improving interoperability and performance. *PR #562*

Embox OS

- Added unit tests for the `scalb()` function in the math library to ensure compliance with POSIX/IEEE 754 standards, covering edge cases like overflow, special values (NaN, infinity), and non-integer exponents (#3631).

WasmEdge

- Added a C API method to delete registered modules from the WasmEdge VM, improving resource management and lifecycle control in long-running or dynamic module applications. *PR #4233*

Open Chromosome Collective

- Contributed to the **Cooler** open-source project by enhancing file validation, fixing BED file parsing in the CLI, and adding input checks in `cload.py` to improve robustness and usability. (#458) (#461) (#462).
- Enhanced CLI usability and robustness in `pairtools` by implementing flexible and canonicalized column handling, improving error tolerance and user experience (#268).

Projects

Text-To-Speech Finetuned Model github.com/ShigrafS/TTS

- Retrained and fine-tuned Microsoft SpeechT5 for Hindi Dataset and a custom-made Technical English Vocabulary.
- Tools used: Python, PyTorch, Colab

Paper Implementation: Attention is all you need 2017

github.com/ShigrafS/Transformer

- Implemented the classic research paper on Transformer Vaswani et al 2017.
- I built my own transformer from scratch to learn the internal working and architecture of transformers and LLMs.
- Tools used: Python, PyTorch, Colab

Paper Implementation:An Image is worth 16x16 words 2021 github.com/ShigrafS/ViT

- Implemented the research paper on Vision Transformer Dosovitskiy et al. 2021.
- Developed an understanding of how to make my own transformers and to apply it in general and for Vision probelems in particular.
- Tools used: Python, PyTorch, Colab

DoggoVision github.com/DoggoVision

- A deep learning project in which I used TensorFlow to fit the Stanford dog breed data set to MobileNetV2, a CNN developed by Google, to recognize the dog breed from a given image of a dog.
- Tools used: Python, Tensorflow, Colab

Additional Experience And Awards

Bharat Scouts & Guide Member (2010-2013): Have served as a Scout member for BSG and served as a patrol leader for 2 years, leading my patrol on various treks and camping.

Prefect (2012-2013 and 2019-2020:

- Served as a prefect at my school twice, helping the faculty in management and routine administration at school.
- Represented the school at various competitions such as the Inter-School Bourn Vita quiz, TTIS inter-school competition, and more.
- Led the management of individual houses for house sports teams.

Best Speaker, School Debate: Culmination of my public speaking with being awarded the Best Speaker award for the Senior Debate Competition at School.