

KULIN PATEL

+1 (667) 335-5907 | Washington DC - Baltimore, MD | Email: contact@kulinpatel.com | GitHub: [kulin-patel](https://github.com/kulin-patel) | LinkedIn: [in/kulin-patel](https://www.linkedin.com/in/kulin-patel)

SUMMARY

- Experienced ML Engineer and Researcher with a proven five-year track record in designing, deploying, and optimizing ML models.
 - Specialized in diverse data domains: Computer Vision, NLP, and EEG time series, with publications on Transformer-based models.
 - Holds a master's in Data Science, focusing on large language models (LLMs). Eager to contribute expertise to dynamic projects.
-

WORK EXPERIENCE

Machine Learning Researcher - *Brain-Machine Interfaces Lab, Baltimore, MD* **Jan 2023 – Present**

- Designed and developed machine learning models; efficiently managed model versions using MLflow for testing and validation
- Published [Research Paper](#) on optimized Transformer algorithm for Facial Expression Recognition (FER) at [IEEE BSN'23](#) at MIT.
- Crafted computationally efficient Transformer-based computer vision algorithms, matching top models in accuracy.
- Leveraged LLM-based algorithms for EEG, boosting accuracy by 32%, with tailored multi-sequence input for transformer encoder.

Machine Learning Engineer - *WebOccult Technology (IT company), India* **Mar 2022 - Aug 2022**

- Developed POC for **text-to-image search pipeline**, enabling efficient querying of a million-image dataset via text input
- Enhanced pipeline with Object Detection, Color Analysis, OCR (Optical Character Recognition), Vector Similarity, and Natural language processing techniques including text cleaning and keyword extraction, improving search and retrieval accuracy.
- Deployed OCR solution using Tesseract and EasyOCR, ensuring accurate extraction of information from unstructured text images.
- Integrated and implemented real-time detection of hand and body pose to Unity game engine with Python API endpoint.

Adjunct Lecturer - *Bath Spa University (United Kingdom - based), U.A.E.* **Sep 2021 – Aug 2022**

- Taught two full-credit courses, covering fundamentals of machine learning, computer vision and Python programming

Artificial Intelligence Engineer - *Doctor On Click (Telehealth check), Singapore* **July 2021 – Mar 2022**

- Programmed a web-based solution, enabling doctors to efficiently retrieve segmented organ images and patient diagnoses
- Completed image segmentation with deep learning for Traditional Chinese Medicine (TCM) with an accuracy of 0.98 IoU.

Instructor, Data Science - *Akshar CompuSoft Education Center, India* **Mar 2019 – Mar 2021**

- Taught fundamentals of Python, data science, machine learning, and provided individualized mentorship to students
-

EDUCATION

Master's in Data Science with a focus on LLMs - *University of Maryland, Baltimore County, GPA: 4.0* **Aug 2022 - May 2024**

- **Courses:** Large Language Models, Intro to Deep Learning, Practical AI, Machine Learning, Big Data processing with Spark Databricks
 - **Work:** Tutored and graded for the class "Introduction to Deep Learning", offering dedicated office hours for student support.
-

PROJECTS

TL-GAN (Transparent Latent Space Generative Adversarial Network)

- Implemented TL GAN to better understand the latent space and improve control over GAN-generated features.
- Controlled human face features with the linear model and visualized the latent space with the multi-label classifier.

Real-time writing on a live web-camera

- Designed a solution for real-time writing on live web camera screen without any physical contact using hand tracking.
 - Gained viral attention on LinkedIn with 2.5 million views, leading to investment proposals for commercial development.
-

AWARDS AND APPEARANCES

- Awarded "Top AI Voice" by LinkedIn for ranking in top 10% of quality contributors to Artificial Intelligence (AI) articles.
 - Presented "Emerging Technologies: Computer Vision, AR, VR" at *Future Generation Scientist (Russia)* to a global audience.
 - Delivered "Roadmap for ML and Computer Vision" at *Amity University (India)*, guiding the next generation of AI leaders.
 - Ignited imaginations with a webinar on "How Machines Learn to Interpret Images" at *Datamites Institute(India)*.
-

SKILLS :

| | |
|--------------------------------|---|
| Programming Tools & Frameworks | : Python, SQL, Conda, CUDA, Training on GPUs, Git, GitHub, PyTorch, TensorFlow, Keras, OpenCV, SciKit Learn, Numpy, Pandas, NLTK, SpaCy, Matplotlib, Flask, Gensim, LangChain, Tesseract, EasyOCR, REST API, FastAPI |
| Machine Learning | : Transformers, ViT, BERT, GPT-3, VAEs, Transfer Learning, Generative AI, GANs, Image generation, Natural Language Processing (NLP), Large Language Models (LLMs), Autoencoders, Diffusion model, Visual Question Answering(VQA), Neural Networks, CNN, RNN, LSTM, Object Recognition, Image processing, Image Classification, OCR (Optical Character Recognition), Pose Estimation |
| DevOps & MLOps | : Docker, Kubernetes, Model Management, Version control, Weights and Biases, Hugging Face, ML pipelines, ML Flow, Airflow, Vector Database (FAISS), Google Cloud Platform (GCP), AWS |
| Computer Science | : Object-oriented programming, Data structure and Algorithm design, Terminal command lines, Linux |
| Soft Skills | : Communication and Presentation, Team player, Problem-solving, Analytical and Critical Thinking |