Vijay Babubhai Doba

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Address	**Gerhart Hauptmann Str, 15** **91058 Erlangen** **Deutschland**
Date and Place of Birth	**11.03.2000 in Surat, INDIEN**
Nationality	**Indian**
Marital Status	**Single**
LinkedIn	**LinkedIn**
Github	**Github**

EDUCATION

Apr 2023 – Present

M.Sc. in Artificial Intelligence, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

- Currently pursuing a Master's in Artificial Intelligence. Completed courses include Advanced Programming Techniques, Human-Computer Interaction, Machine Learning, AI, Business Intelligence, and Data Science.

Jul 2018 – Apr 2022

B.E. in Computer Engineering, Gujarat Technological University, Ahmedabad, India

- Comprehensive study in Computer Engineering, focusing on Data Structures, Algorithms, Database Systems, Object-Oriented Programming, Computer Networks, IT Security, Artificial Intelligence, Machine Learning, and Software Engineering.
- GPA: 7.76/10.0

WORK EXPERIENCE

Jan 2022 – Apr 2022

Intern, Spider Technology

- Built and maintained backend features for a sales automation platform using **PHP Laravel**.
- Integrated third-party **REST APIs** to automate data synchronization and business workflows.

- Optimized the **MySQL** database, focusing on efficient data structures and query performance.

May 2022 – May 2023   Web Developer, iFLUTTER

- Developed, tested, and maintained client websites according to requirements.
- Established modular project structures and maintained documentation.
- Troubleshooting issues and optimized website performance.

LANGUAGE

Deutsch (A2), Englisch (Fluent), Hindi (Fluent),
Gujarati (Native)

PROJECTS

ID-like Prompt Learning for Few-Shot OOD Detection

Technologies: Python, PyTorch, CLIP (OpenAI), HuggingFace Datasets, CUDA, Git, Linux shell scripting

- Reproduced a **CVPR 2023 Study** on Out-of-Distribution (OOD) detection using **Few-Shot Prompt Learning** with CLIP.
- Adapted training from **ImageNet 1K** to **ImageNet 100** due to hardware constraints; achieved **AUROC up to 98,63** on the Places dataset.
- Implemented **Mixed-Precision Training**, customized **Tokenization Context Length** and **ImageNet-specific Prompt Templates** to improve performance/efficiency.
- Evaluated on multiple OOD datasets (**Naturalist, SUN, Places**) and validated results using original metrics (**FPR 95, AUROC, AUPR**).

FedAS: Personalized Federated Learning

Technologies: Python, PyTorch, NumPy, CIFAR-10/CIFAR-100 datasets, CUDA, Git, Linux shell scripting

- Reproduced a **CVPR 2023 Study** on personalized federated learning using the **FedAS-Algorithmus**.
- Developed a **Non-IID-Datenaufteilung** method via Dirichlet distribution to improve model accuracy for heterogeneous clients.
- Fixed missing parameters in source code by creating a **custom data generation function** for CIFAR-10 and CIFAR-100.

- Optimized code with **error handling, modular structure, and improved readability** for robust experiments with **FedAS, FedAvg and FedProx**.
- Achieved higher accuracy than baseline methods through **beta-value optimization** and **personalized fine-tunning**.

Chatrio - Real-time Anonymous Chat Platform

Technologies: React, TypeScript, Node.js, Express, Socket.IO, Responsive UI, CSS, PWA.

- Developed a **Full-Stack real-time chat application** with WebSocket-based messaging using **Socket.IO** and **Node.js** backend.
- Built a **responsive React/TypeScript Frontend** with mobile-friendly design, light/dark mode, and custom branding.
- Implemented **Interest-Based Matching**, user reporting, typing indicators, and image sharing with compression/size limits.
- Designed **secure UI/UX-Standards** for anonymous interactions.
- Enabled **cross-device access** (desktop & mobile) via PWA support.

E-Commerce Website

Technologies: Java, MySQL, Node.js

- Built the core server-side logic and page rendering using **Java**.
- Designed and normalized the **MySQL** database for products, users, and orders.
- Implemented secure user authentication and session management for a persistent shopping cart.
- Developed key features like a product catalog, AJAX-powered cart, and a multi-step checkout.
- Integrated a **Node.js** microservice via REST API for real-time order status updates.

TECHNICAL SKILLS

Programming Languages

C, C++, SQL, HTML, JavaScript, Python, Java.

Frameworks/Libraries

PyTorch, NumPy, TypeScript, React, Node.js, Express, Laravel, Socket.IO, HuggingFace Datasets, CLIP (OpenAI)

Database Systems

MySQL, CIFAR-10/CIFAR-100-Datensätze (Forschungs Datensätze)

Tech Stack

Git, Linux-Shell-Scripting, API-Integration, Mixed-Precision-Training, Responsive UI-Design, PWA-Entwicklung, WebSockets, CUDA.

Operating Systems	Linux, macOS, Windows
Version Control	GIT

HOBBIES & INTERESTS

Traveling, Sports (Cricket, Volleyball)

Erlangen, Vijay Babubhai Doba