Abinesh Mathivanan

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github.com/Abinesh-Mathivanan

Education

KIT-Kalaignarkarunanidhi Institute of Technology Expected May 2026
B.Tech in Artificial Intelligence and Data Science (CGPA: 8.89 / 10.00) *Coimbatore, TamilNadu*

- **Relevant Coursework:** Data Structures and Algorithms (C), Data Science and Intro to ML, OOPs (Python), Discrete Mathematics, Probability and Queuing Theory, Database Management Systems

Experience

Artizence Apr 2023 – Sep 2023
Machine Learning Intern *Lucknow, India*

- Implemented Computer Vision models such as Haar Cascade, YOLO v5, and YOLO v7 for real-time surveillance projects. Completed projects on text detection and extraction using hybrid SVM + HMM and enhanced the model accuracy by 20%.
- Optimized the image processing projects using a hybrid approach to OpenCV, reducing the processing time by 30%, and deployed using Flask.

Neurala Vox AI May 2022 – Nov 2022
Deep Learning Intern *Coimbatore, India*

- Designed and implemented deep learning models using Pytorch and Keras for brain-inspired hardware interface for emotional understanding in robots. Initially developed with 200k parameters, later scaled based on the requirements.

Helix Space Organization Nov 2021 – Apr 2022
Software Engineering Intern *Coimbatore, India*

- Contributed to simulating 3D models of the cube-sat and programmed the basic propulsion system using C++, resulting in 43% increased efficiency and programmed analytical systems in Julia and simulation graphs in Python Matplotlib.
- Led the development of black-hole simulation algorithms using Javascript and Python, using Pytorch, Keras along ReACT generated dataset of size 70,000 samples and 600k parameters.

Projects

Siphus Cosmo-classifier | *Python*, *Julia*, *Keras*, *Tensorflow*, *MaterialUI*, *Flask*, *MySQL*, *MongoDB*

- Built a duplicated dataset of 70,000 samples using ReACT cosmo software on 5 different cosmology models and trained using 250k parameters.
- Deployed the classifier using Flask server and integrated with MySQL database in the backend, later used MongoDB resulting in 20% increase in efficiency. Built the interface using MaterialUI allowing users to upload further data samples.

Dankdate - LLM based networking | *GPT*, *Python*, *Scikit-learn*, *Keras*, *Next.js*, *Django*, *Redis*, *Firebase*, *MongoDB*

- Pre-trained GPT models and developed 700k parameter Language models using Python and trained using cloud GPUs for 48 hours. Later used OpenAI keys and Gemini APIs for efficient summarization of user data.
- Built the interface using Next.js, used bun for faster build, and deployed the backend model using Django.
- Implemented Redis for cache retrieval and used MongoDB to store user data. Firebase was introduced for user authentication and microsoft-phi-3-mini was used for Vision tasks.

in-love.js - javascript library | *Javascript*, *Typescript*, *Node.js*, *npm*, *Git*, *Bootstrap*, *Vue.js*

- Created an open-source javascript library for love-proposal sites, using node modules such as babel-js, webpack, and puppeteer. Testing modules such as mocha, jest, and chai were implemented for real-time testing across webs.
- Published in npm official platform and crossed 100+ downloads within the first week of launch.

Technical Skills

Languages: C, C++, Python, Julia, Javascript, Typescript, SQL
Technologies: TensorFlow, Keras, PyTorch, jQuery, Bootstrap, MySQL, MongoDB, Azure ML, Next.js, Vue.js, Django, Flask, Node.js, ANTLR, LLVM IR, Huggingface.
Concepts: Artificial Intelligence, Machine Learning, Neural Networks, Compiler, Operating System, Data Structures, Computer architecture, Database Normalization, Linux, Web Development, API, Mathematical simulation, and modeling.