Kavana B C

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Summary

Aspiring Software Engineer with a strong foundation in software development and a keen interest in emerging technologies. Skilled in Java and proficient in web technologies, frameworks, and database integration, I excel in tackling complex problems creatively. My experience in machine learning, particularly in image processing, further enhances my technical skills. I am committed to continuous learning, adaptable to new technologies, and possess strong problem-solving abilities, making me a valuable asset to any software development team.

Education

B.E in Computer Science 2022-Present
Siddaganga Institute of Technology, Tumkur, Karnataka CGPA: 8.16

Diploma in Computer Science 2019-2022
Siddaganga Polytechnic, Tumkur, Karnataka Percentage: 91.15

Primary and Secondary Education 2009-2019
Sri Renuka High School, Bengaluru, Karnataka Percentage: 87.52

Skills Summary

- **Languages:** C/Java, Python, JavaScript, HTML, CSS
- **Frameworks:** React.js
- **UI/Styling Frameworks:** Tailwind CSS, Bootstrap
- **Databases:** MySQL, MongoDB, Firebase
- **Dev Tools:** Visual Studio Code, Git, GitHub, Android Studio
- **CS Fundamentals:** Data Structures and Algorithms, Object Oriented Programming, Database Management Systems, Unix and Shell Programming
- **Libraries:** NumPy, Pandas, Matplotlib, Seaborn, OpenCV, PyTorch, BeautifulSoup, Scikit-learn
- **Analytical Tools:** Tableau

Experience

DELL Technologies R & D Banglore, Karnataka
–Software engineering Intern March 2025 – Present

- Gained hands-on experience in Machine Learning fundamentals including supervised learning, regression, web scraping, and multi-class classification. Applied Linear Regression on real-world datasets with visual interpretation using matplotlib.
- Developed a state-of-the-art Diabetic Retinopathy Detection pipeline using EfficientNet, DenseNet, MobileNet, ResNet, ConvNext architectures enhanced with ensemble techniques, improving classification accuracy and robustness over single-model baselines.
- Trained models using AdamW optimizer, CosineAnnealingLR scheduler, CrossEntropyLoss with label smoothing, and WeightedRandomSampler to handle class imbalance effectively; attained 95.73% validation accuracy.
- Developed visual analytics dashboards with Seaborn and Matplotlib to explore data correlations and patterns, supporting hypothesis generation and feature selection for improved model performance.
- Built interactive and fully responsive UI for OcuCare platform using React.js, Material-UI, and advanced CSS techniques. Integrated animated transitions and custom theming for consistent branding and enhanced user experience.
- Designed and implemented a modular React component structure including protected routing (PrivetRoute) for secure access, custom hooks, and dynamic routing to service details, doctors, and appointments pages.
- Applied modern frontend best practices such as responsive design, semantic markup, and accessible navigation to ensure optimal UX across devices and user types.

Project Lead

- **UrbanDrobe– Your Wardrobe Upgrade Starts Here!** *React.js, Bootstrap, Fake Store API, Vercel*
  - A fashion e-commerce web app with a modern UI, enabling users to browse and explore curated wardrobe collections.
  - Features dynamic routing, responsive layout, reusable components, and clean state management.
  - Deployed on Vercel with mobile-first design, fast performance, and smooth page transitions.
- **Tesla Landing Page** *HTML, Tailwind CSS, Vercel*
  - A responsive and modern landing page showcasing Tesla car models using clean UI principles.
  - Deployed on Netlify with smooth scroll navigation, section transitions, and Tailwind-powered layout.
  - Integrated mobile-first design and optimized assets for faster load times and better performance.
- **Spotify Clone** *React.js, Spotify Web API, Context API*
  - Developed a fully functional Spotify-inspired web music player with user authentication via Spotify OAuth.
  - Integrated Spotify Web API to fetch user profile, playlists, and dynamically play recommended songs.
  - Implemented global state management using React Context API for seamless user experience across components.
- **Multi-Scale Transformer Analysis for Areca-nut Harvesting** *MViT, Swin, PyTorch, RaspberryPi*
  - Developed an AI-driven system utilizing advanced deep learning models, including Swin Transformer and Multi-scale Vision Transformer (MViT), to classify arecanuts into five categories: Ripened, Semi-Ripened, Overripened, Diseased, and Unripened.
  - Deployed the Swin Transformer model on a Raspberry Pi for real-time edge inference, using a camera module for image capture and a physical button trigger, with voice feedback for classification results. The MViT model was explored for its hierarchical feature extraction capabilities during the design phase to optimize detection.
- **OcuCare - An AI-Powered Diabetic Retinopathy Detection** *PyTorch, Flask, React.js, Material UI, Firebase, CNN, Ensemble Learning*
  - Developed a robust AI diagnostic system utilizing an ensemble of EfficientNetV2-M, ResNet50, MobileNetV3, DenseNet121, and ConvNeXt-Tiny for multi-class classification of diabetic retinopathy from fundus images (5 severity levels).
  - Built a fully responsive frontend with React.js, Material UI, and Firebase Auth, enabling seamless screening, authentication, appointment booking, and visualization of diagnostic results.
  - UI features include secure login/register, image carousel, doctor listings, AI screening module, service descriptions, appointment system, and interactive alerts using React-SweetAlert.
  - Engineered a Flask-based backend with ensemble prediction and dynamic PDF report generation; supported robust checkpointing and resume logic during training.
- **Sentiment Analysis using Bidirectional LSTM** *TensorFlow, Keras, IMDB Dataset, Streamlit*
  - Built a Bidirectional LSTM model on the IMDb dataset to classify movie reviews as Positive or Negative with over 90% accuracy and Implemented comprehensive preprocessing including stopword filtering, tokenization, and sequence padding for robust text input handling.
  - Developed a real-time sentiment prediction interface using Streamlit, displaying sentiment classification with confidence scores from user-provided reviews.
- **Real-Time American Sign Language (ASL) Alphabet Detection** *CNN, OpenCV, Streamlit, TensorFlow/Keras*
  - Built a real-time ASL alphabet classification system using a custom Convolutional Neural Network (CNN), trained on 87,000 grayscale images across 29 classes including letters A–Z, SPACE, NOTHING, and DEL and Achieved over 99% training accuracy.
  - Integrated OpenCV for webcam input and deployed the trained model through a Streamlit-based UI to perform live gesture recognition with accurate alphabet prediction.
- **EchoVista** *OpenCV, Python, RaspberryPi*
  - A smart handheld device for blind people using image processing and machine learning
  - Used OpenCV libraries to detect Objects, Currency, and Obstacles.
  - Integrated into RaspberryPI board and tested real-time inference.

Certificates

- Full Stack Development with React and Node.js - [link]
- DSA -[link]
- Generative AI -[link]
- Data Analytics on Forage by Deloitte-[link]
- OpenAI Generative Pre-trained Transformer 3 (GPT-3) for developers-[link]

Achievements

- Solved **1300+ Data Structures and Algorithms** problems on GeeksforGeeks
- Secured **First** Place in Diploma studies and 10th grade for outstanding academic performance
- Won multiple **Medals and Awards** in General Knowledge quizzes
- Represented at the **State Level Kabaddi championship**
- Honored with the **Best Student Award** for overall excellence(2016)

Soft Skills

- Work Ethic, Self motivated
- Problem-Solving
- Eager to learn new technologies

Languages

- Kannada, English, Hindi

Organizations

- **ScriptInk** (06/2023-present)
  - *Volunteered club events being a member (Web Developer)*