# Keerthana Panchumarthi

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## About

Full Stack Developer and AI/ML enthusiast with a passion for building meaningful, user-focused solutions. Driven by curiosity and creativity, with experience in research-driven and real-world projects. Always eager to learn, innovate, and take on challenges that blend technology with real impact.

## Work Experience

**Research and Development Intern – SRM AP**                                    *August 2025 – Present*
Paid internship involving EEG data analysis and computational neuroscience. Developed Python scripts to preprocess EEG signals, extract spectral features (alpha/beta bands), and implement algorithms for emotion indices (happiness, relaxation, stress). Automated data pipelines, performed statistical analysis, and visualized results to evaluate correlations between environmental factors and neural activity.

**Deep Learning Intern – Andhra Pradesh Space Applications Centre [APSAC]**     *May 2025 – July 2025*
Working on drone-based surface crack detection using image processing and deep learning. Initially used LBP and Gabor filters for texture extraction, and currently training YOLO models with optimized hyperparameters for real-time crack detection.

**AI/ML Research Intern – Idea Works**                                          *Feb 2025 – May 2025*
Contributed to building Acharya.AI, an AI-based educational assistant for students. Focused on developing an original computer vision-powered model using Python, avoiding pre-built LLM APIs, and worked on custom ML logic and visual recognition features.

**Web Development Intern – SRM AP**                                             *July 2024 – Apr 2025*
Developed web applications for a research project focusing on SDG awareness, student mental health, traffic, greenery, and air quality in schools. Handled EEG data processing, basic computer vision tasks, and contributed to frontend development and data recording.

## Projects

**Hands-Free PC Control**                                                       ○Git Repository
Implemented a gesture-based mouse control system using OpenCV, MediaPipe, and PyAutoGUI. Users can control the cursor and perform actions like left-click, right-click, double-click, and take screenshots using hand gestures.

**OnceUponAfind – Online Thrift Store**                                         ○Git Repository
Built a full-stack thrift store web app using Flask (Jinja2), PHP, Bootstrap, and jsPDF. Designed a responsive UI and implemented receipt generation and version control with GitHub.

**ArcTracker**                                                                  ○Git Repository
A Chrome extension that tracks browsing activity, categorizes websites as productive or entertainment, visualizes time distribution, and assigns daily productivity scores with contextual arc labels to promote focus and digital accountability.

**Surface-Crack-Detection**                                                     ○Git Repository
Implemented an image processing pipeline for surface crack detection using Local Binary Patterns (LBP) and Gabor filters for texture feature extraction. Achieved accurate classification by combining spatial and frequency domain features.

## Education

**2023 - 2027**    Bachelor's Degree, SRM-AP University (GPA: 9.03/10)
**2022**    Class 12, SSC Board (GPA: 9.4/10)
**2021**    Class 10, SSC Board (GPA: 10/10)

## Technical Skills

**Languages:** C, C++, Python, JavaScript, TypeScript, Java, HTML/CSS, SQL, PHP
**Frameworks:** React.js, Flask, Bootstrap, MongoDB, Jinja2
**Developer Tools:** Git, VS Code, Google Colab, Jupyter Notebook
**Libraries:** Pandas, NumPy, Matplotlib, Seaborn, Scikit-Learn, TensorFlow, OpenCV, MediaPipe, cvzone, Pillow, Requests, BeautifulSoup
**Currently Learning:** Deep Learning, Node.js, Express.js, FastAPI, Computer Networks (CN)

## Certifications

**Coursera:** Supervised Machine Learning: Regression and Classification, Advanced Learning Algorithms, Unsupervised Learning, Recommenders, Reinforcement Learning
**Jobaaj Learnings:** Data Science and Analytics Workshop, Power BI Workshop
**Udemy:** 2024 Complete SQL Bootcamp from Zero to Hero in SQL