

TUSHAR PAL

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👨‍🍳 [CodeChef](#)

EDUCATION

University Of Petroleum And Energy Studies

B.Tech - Computer Science and Engineering

Aug 2022 – May 2026

Dehradun, Uttarakhand

EXPERIENCE

IBM

Jun 2025 - Jul 2025

Role - Project Intern

Remote

- Collaborated with IBM mentors, as one of the most junior team members, to design an email spam detection system using Naive Bayes classifier and a Gradio-based UI, **97% accuracy** in classifying over 4,000 messages as spam or ham.
- Spearheaded the construction of a machine learning pipeline featuring a Multinomial Naive Bayes classifier; refined TF-IDF vectorization to reduce model training time by 20 minutes.
- Built an interactive Gradio web application for spam classification, incorporating user feedback mechanisms that optimize classification accuracy by **5%** through iterative model refinement and retraining.

PROJECTS

AI-Powered Driver Drowsiness Detection System 📄 | [Java](#), [OpenCV](#), [CNN](#)

Aug 2024

- Developed and refined a real-time AI system to monitor driver behavior, achieving **97% accuracy** in detecting signs of drowsiness.
- Employed machine learning techniques to dissect visual indicators of driver fatigue, leading to the identification of crucial insights that fixed the causes of accidents, and improved safety.
- Assembled a comprehensive dataset of 20,000+ labeled video clips demonstrating diverse driver behaviors, empowering senior engineers to fix the three biggest causes of crashes.

Intelligent Banking System Chatbot 📄 | [Java](#), [NLP](#)

Jan 2025

- Constructed a natural language processing chatbot for banking, enabling users to effortlessly access account details and resolve payment issues, achieving a **95% customer satisfaction** rating.
- Automated loan eligibility evaluation using predictive models, decreased manual reviews by **90%**, freeing up **2 loan officers** to focus on complex cases, and cutting operational costs by **15%**.
- Launched rule-based fraud filters decreasing manual reviews by **20%**, this allowed the fraud team to focus on the most sophisticated threats, resulting in quicker response times.

Email Spam Detection System 📄 | [Python](#), [Scikit-learn](#), [Gradio](#), [Pandas](#), [NumPy](#)

Jun 2025

- Created a machine learning-powered system for real-time email spam detection, achieving **97% accuracy** on a dataset of over 4,000 email messages.
- Launched a Gradio-based web application for real-time spam detection, enabling users to classify email messages with **97% accuracy** based on the pre-trained Multinomial Naive Bayes model.
- Initialized an automated process using TF-IDF vectorization for feature extraction, improving spam detection processing speed by **30 %**, directly impacting user experience.

Samsung Clone - Responsive E-Commerce Frontend 📄 | [HTML](#), [CSS](#)

Jul 2025

- Orchestrated the creation of a pixel-perfect, responsive clone of Samsung's website, focusing on cross-browser compatibility and optimized image loading, resulting in **20%** faster page load times.
- Constructed an interactive mega menu for core categories such as 'Shop' and 'Mobile', increased product page views by **30%** and reduced bounce rate on the landing page by **15%**.
- Fashioned a responsive navigation bar featuring a hover-based mega menu for product categories, enhancing user experience by reducing clicks to reach desired products by **25%**.
- Emulated Samsung's modern design aesthetics with attention to layout, typography, and visual hierarchy.

- Designed and prepared a fully responsive and visually engaging personal portfolio website to showcase projects, skills, and professional experience.
- Engineered a sleek, dark-themed user interface leveraging custom CSS and interactive hover effects, leading to a **30% boost in user engagement** on portfolio projects, as measured by average session duration and scroll depth.
- Engineered a mobile-first design strategy incorporating cascading style sheets and flexible grids, which decreased bounce rates on mobile devices by **15%** and boost overall page load times.

TECHNICAL SKILLS

Programming Languages: Python, Java, JavaScript

Frontend Development: HTML5, CSS3, React, Bootstrap, Tailwind CSS, Responsive Design, UI/UX Design

Backend Technologies: Node.js, Express.js, React.js, MongoDB, REST APIs, JSON, Serverless Architecture, Microservices

AI/ML and Data Science: Natural Language Processing (NLP), Machine Learning, Deep Learning, Data Mining, Statistical Analysis, Data Visualization, Scikit-learn

Tools: VS Code, Jupyter Notebook, IntelliJ, Git, Docker, Kubernetes

CERTIFICATIONS

- 250 problems on CodeChef
- Artificial Intelligence - MyCaptain
- Python - MyCaptain
- Web Development - Brillica Services

EXTRACURRICULAR

- Completed UCMAS
- Silver Medalist in National open skating Championship
- Medha Yoga level 1 course holder of Art of Living