Sangram Dighe

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EDUCATION

Syracuse University - College of Engineering & Computer Science, Syracuse, NY — August 2024 – May 2026
Master of Science, **Computer Science**

- **Coursework:** Design & Analysis of Algorithm, Artificial Neural Network, Machine Learning and Algorithms, Natural Language Processing, Applied Agentic AI systems, Social Media & Data Mining — **GPA:** 3.643

Savitribai Phule Pune University - AISSMS IOIT, Pune, India — January 2021 – June 2024
Bachelor of Engineering, **Artificial Intelligence and Data Science** — **CGPA:** 8.42/10

EXPERIENCE

IT Intern, CompuSoul Computer Solutions – Remote, North Carolina — June 2025 – August 2025

- Developed a **telemedicine-enabled appointment booking web app** using **PHP Laravel** (backend) and **Flutter Dart** (mobile app) for **Margaret Bowen MD PLLC**, improving patient access to mental health and substance abuse care.
- **Designed role-based panels** (Admin, Doctor, Receptionist, Patient) with **MySQL** and **Firebase** for secure data storage and real-time notifications via **email/SMS**. Implemented **HIPAA-compliant features** (MFA, encryption) and remote visit support via **Zoom/Google Meet**.

AR/VR Developer, Mayur Hajare Consultancy – Pune, India — March 2024 – August 2024

- Developed web-based **AR/VR experience**s (marker-based/markerless AR, 3D virtual tours) using **JavaScript**, **AR.js**, **Three.js**, **A-Frame**, **ARCore**, and **PHP**.
- Delivered AR-enabled business cards and real-estate virtual tours, helping secure **3+ clients** and driving a **1.5× increase in customer inquiries** through improved property visualization.

PROJECTS

Multi-Style Text Generation for Enhanced Text Transformation — August 2025 – December 2025

- Built a **single controllable style-transfer model** that rewrites any input into **five styles** (Professional, Casual, Polite, Social & Emojify) using an instruction prompt format ("**convert to {style}: {text}**"), enabling consistent multi-style generation without training separate models.
- Created a **synthetic multi-style parallel dataset** (13,176 train / 1,464 val / 2,500 test) in JSONL and fine-tuned **FLAN-T5-base** with a reproducible pipeline (HF Transformers on **University GPU cluster HTCondor**), achieving strong content preservation (**ROUGE-1 ≈ 0.736, BLEU ≈ 0.538**) and a demo UI (React + Flask) for real-time rewriting.

Hybrid Capsule Networks & Vision Transformers for CIFAR-100 Image Classification — January 2025 – April 2025

- Built and compared **ResNet-34**, **ViT-Tiny**, and **CapsNet** (Sabour et al.) on **CIFAR-100** (50K train / 10K test) in **PyTorch/CUDA**, using consistent training/augmentation to ensure fair benchmarking.
- Proposed a **Capsule** + **ViT hybrid (CapsViT)** using cross-attention (capsules query transformer tokens) and achieved **62.6% top-1 accuracy**, beating **ResNet-34/CapsNet (58.3%)** and **ViT-Tiny (51.3%)**, with lower routing cost.

Caption Speak: Empowering Sight with PI — July 2023 – June 2024

- Built an affordable **real-time image captioning system** that provides **audio descriptions** to visually impaired users, supporting safer navigation and daily independence (**tested with 3+ users**).
- Implemented a **CNN–LSTM** captioning pipeline on **Raspberry Pi** with camera-based capture and on-device processing, achieving under **2 seconds per image** for near real-time feedback.

TECHNICAL SKILLS

- **Languages:** Python, R, C/C++, Java, Scala, SQL, JavaScript, Haskell, Julia
- **Machine Learning & Deep Learning:** PyTorch, TensorFlow/Keras, scikit-learn, Hugging Face Transformers
- **Data Analysis & Visualization:** NumPy, Pandas, Matplotlib, Seaborn
- **Computer Vision & NLP:** OpenCV, NLTK, spaCy
- **Databases & Storage:** MySQL, MongoDB, PostgreSQL, Firebase, Amazon S3
- **Cloud / Big Data / DevOps:** AWS (EC2, S3, IAM), Microsoft Azure, Spark, Hadoop, Docker
- **Tools & App Development:** Git, Linux, Jupyter Notebook, Flask, Django, Flutter (Dart)

LEADERSHIP/ACTIVITIES

- Managed finances for the Artificial Intelligence Student Association **(AISA)** and Department of Engineering Sciences Student Association **(DESSA)**, optimizing fund allocation to support 10+ events, workshops and conferences, achieving 100% transparency in financial reporting.