Arun Gaonkar

Linkedin: https://www.linkedin.com/in/arun-gaonkar/
Website: https://arungaonkar.github.io/

Email : agaonka@ncsu.edu
Mobile : +1-919-349-6169

Education

- **North Carolina State University** — Raleigh, NC
  Masters, Computer Science; GPA: 3.96 — *Aug 2021 - May 2023*
- **PES University** — Bangalore, India
  Bachelor of Technology, ECE; GPA: 3.64 (8.57/10.0) — *Aug 2016 - Jun 2020*

Skills Summary

- **Languages**: Python, C/C++, Java, MATLAB
- **Frameworks**: HTML, JavaScript, CSS, REST, Jenkins, Apache
- **Tools & Technologies**: TensorFlow, PyTorch, Git, GitHub, Jupyter Notebook
- **Cloud Technologies**: Azure, Kubernetes, Docker
- **Databases**: MySQL, PostgreSQL, AWS DynamoDB, PowerBI
- **ML & NLP Models**: Regression, XGBoost, CNN, LSTM, BERT, Word2Vec, Tf-Idf

Experience

- **North Carolina State University** — Raleigh, NC
  Research Assistant - Social AI Lab — *Jan 2023 - Current*
  - Curated a new dataset to identify and extract the presence of prejudice in social media for a case study.
  - Manually annotated each sentence and its target with a team of 3 for higher consistency and accuracy.
  - Planning to analyze the trend and leverage transformer-based models for extracting prejudiced sentences.

- **North Carolina State University** — Raleigh, NC
  Research Assistant - Innovative Educational Computing Lab — *Sept 2022 - Jan 2023*
  - Led data collection procedures and conducted interactve sessions to understand learning patterns.
  - Assisted in data wrangling and data labeling and improved agent's performance for solving algebra equations.

- **LexisNexis Risk Solutions** — Alpharetta, GA
  Intern - Data Scientist - HPCC Systems — *May 2022 - Aug 2022*
  - Analyzed behavior of the HPCC_Causality toolkit on synthetic and real-world datasets for causal discovery.
  - Leveraged discretization technique to increase the speed of probabilistic dependence tests by 10-fold.
  - Discovered causal relations using Bayesian networks, conditionalization and drew causal models with 9+ variables.

Academic Projects

- **Context Based Sarcasm Detection (Text Processing)**: Created a dataset of 28,000+ news entries, utilized NLP techniques including embedding, tokenization, and Bi-LSTM & RoBERTa models to achieve 96% classification accuracy for context-based sarcasm detection, resulting in improved understanding of sarcasm in language.
- **Brain Tumor Image Classification (Image Processing)**: Achieved 92% accuracy on MRI image classification for brain tumors by developing deep learning models with Bi-LSTM and CNN using TensorFlow and optimizing hyperparameters, leading to potential improvements in early detection and treatment.
- **Large-size Matrix Inversion Using Recurrent Neural network**: Developed Hopfield Neural Network by constructing a matrix representation with op-amps for analog realization in MATLAB and reducing the computation complexity of matrix inversion from O(N$\hat{3}$) to O(N$\hat{1}$.5), improving the efficiency and speed of the neural network training process.
- **Flood-relief Bot: Real-time human detection**: Developed human detection in real-time using SSD_v2_Quantized_COCO and optimized to improve accuracy. Integrated the system with Raspberry Pi for enhanced scalability, resulting in increased efficiency and effectiveness of human detection in flood & integrated with an amphi-boat prototype .
- **Wildfire Data Analysis & Cause Prediction (Data Analysis & Data Visualization)**: Maximized wildfire cause prediction accuracy to 93% by leading a team of 3 in building an end-to-end machine learning solution and analyzing 1.88 million records using ETL & data visualization techniques, potentially enabling effective and efficient fire prevention & response measures.
- **Example-Bot: Personalized Code Assistant (Application Development)**: Built a server-based chatbot using Ansible and Git bash for CRUD operations on MongoDB, designed to help developers create, store, and retrieve customized code snippets and API examples, while following Scrum and Agile methodologies. Achieved 96% test coverage by implementing unit testing with Chai and Mocha, and deployed a seamless CI/CD pipeline.

Honors and Awards

- Won prestigious Prof. CNR Rao award for being a consistent top 10% performer in PES University.