Gauri Vaidya

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Summary: PhD candidate in Artificial Intelligence with expertise in end-to-end design, optimization, and deployment of machine learning workflows. Skilled in developing explainable AI solutions for high-performance environments, and data visualization techniques. Demonstrated success in driving impactful results through leading collaborative problem-solving and system enhancements.

Education

10/2021 – present **Ph.D. in Artificial Intelligence**, *University of Limerick*, Ireland.

08/2016 – 10/2020 **Bachelors of Engineering in Computer Science and Engineering**, *Government College of Engineering, Aurangabad*, India, GPA: 9.38/10.0 (A++).
Other Professional certifications are available here.

Experience

01/2022 – present **Teaching Assistant**, *University of Limerick*, Ireland.
- Led coding labs for 200+ students on Racket and Lambda calculus alongside an instructor and 3 TAs.
- Mentored 60+ students in web development using Python, HTML, CSS, and PHP.

11/2019 – 09/2021 **Research Intern**, *University of Limerick*, Ireland.
- Engineered a cryptographically secure pseudo-random number generator in collaboration with Intel. [paper]
- Developed a interoperable blockchain framework for secure electronic healthcare data sharing under the EU Horizon 2020 project. [paper]

11/2020 – 10/2021 **Trainee Analyst**, *Principal Global Services*, India.
- Optimized insurance frameworks by automating workflows, leading to a 20% improvement in efficiency.
- Delivered client-specific solutions with a 100% project completion rate through cross-functional collaboration.

11/2019 – 09/2021 **Data Engineer Intern**, *EC Mobility*, India.
- Enhanced semantic segmentation models for autonomous driving systems, improving accuracy by 10%.
- Conducted quality assurance and streamlined workflows in a collaborative team environment.

Skills and Proficiencies

Soft Skills	Critical Thinking, Collaborative Problem-Solving, Effective Communication
Languages	Python, R, SQL, C
Libraries	TensorFlow, PyTorch, Scikit-Learn, Numpy, Pandas, Matplotlib, Seaborn, Plotly, Streamlit
Tools	Git, Bash, Latex, Microsoft Office
Methods	Single-cell multi-omics Analysis, Dimensionality reduction, Statistical Analysis

Selected Projects

01/2023 – 04/2023 **Immune cell profiling from single-cell RNA**, [Github].
- Investigated the integration of dimensionality reduction and annotation tools comparison to streamline multi-stage downstream processing, for patient immune profile analysis with Seurat v4.0 pipeline in R.

01/2022 – 04/2022 **Data Analysis and Forecasting**, [paper].
- Conducted data analysis using Machine Learning models (Regression, Artificial Neural Networks, ARIMA) and scenario modeling to propose effective strategies for reducing carbon emissions in road transport.

11/2019 – 09/2021 **Blockchain Framework for secure health data sharing**, [paper].
- Developed a blockchain-based knowledge graph-driven framework for secure health data sharing, enhancing security and interoperability.

01/2019 – 03/2019 **Artificial Intelligence driven Solid Waste Management System**, [Github].
- Contributed to the development of an IoT-enabled solid waste management system, improving waste collection and recycling processes.

Selected Publications

2023 **Vaidya, G.**, Kshirsagar, M., Ryan, C. *Grammatical Evolution-Driven Algorithm for Efficient Hyperparameter Optimization of Neural Networks.* MDPI Algorithms. [doi]

2022 Ryan, C., Kshirsagar, M., **Vaidya, G.** *Design of a Cryptographically Secure Pseudo-Random Number Generator with Grammatical Evolution.* Nature Scientific Reports. [doi]

2021 Yao, Y., Kshirsagar, M., **Vaidya, G.** *Convergence of Blockchain, Autonomous Agents, and Knowledge Graph for EHR Sharing.* Frontiers in Blockchain. [doi]

*References will be available on request.

Last Updated: 01/25