SWATI RAJWAL

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EDUCATION

Emory University, USA — *2023 - 2028*
PhD, Computer Science & Biomedical Informatics — Sarker Lab

Netaji Subhas University of Technology — *2020 - 2022*
Master of Technology (M.Tech.) Computer Science — Dept. Rank 1, Gold Medalist

Indira Gandhi Delhi Technical University for Women — *2014-2018*
Bachelor of Technology (B.Tech.) Computer Science & Engineering — First Class with Distinction

CURRENT PROJECTS

Social Isolation-related Suicide Circumstances within NVDRS — Atlanta, USA
Emory Biomedical Informatics Department & CDC — *Sept. 2023 - Jan 2024*

* NLP-based approach to track trends in suicide circumstances using NVDRS dataset (Manuscript underway)
* BERTopic & Regex for isolation-topic identification and supervised ML models for classification
* Identified social determinants of health to find trends within marginalized communities and subgroups

Concordance in Breast Cancer Screening b/w Traditional & DL Models — Atlanta, USA
CSI Department, Emory University — *Sept - December 2023*

* Utilized EMory BrEast Imaging Dataset for inter-observer variability study between ML & DL approaches
* Used SVM for clinical data and ResNet, InceptionNetV2 for mammograms classification on H100 Server
* Preliminary research conducted as part of CS 574 coursework in Machine Learning (by Prof. Joyce Ho)

ACADEMIC POSITIONS

University of Cambridge — United Kingdom
Engineering Dept., Research Assistant w/ Dr. Mancini — *Jan - Aug 2023*

* Investigated fluctuating values of statistical learning in chronic back pain and endogenous pain regulation
* Designed PsychoPy task to record pain & clinical data (STarT, PHQ-9, BPI, PCS, GAD-7) via Qualtrics.
* Computationally (**Python** & **RSTAN**) processed data recorded from a 3-armed bandit algo-based task
* Facilitated EPSRC grant application that awarded our team 1,216,800 CPU & 1,000 GPU hours

University of Oxford — United Kingdom
Saïd Business School, Research Assistant — *Aug - December 2022*

* Research on **the applications of Generative adversarial networks (GANs) in marketing & ads.**
* Under the guidance of Dr. Efremova, Prof. Hadi, Prof. Andrew, and WPP as the industry partner
* Implemented technical architecture for automating image processing using the StyleGAN3 model in Python.

PUBLICATIONS

* **Rajwal, S.**, Pandey, A., et al. 2024. Unveiling Voices: Identification of Concerns in a Social Media Breast Cancer Cohort via NLP. To-appear in CL4HEALTH Workshop within LREC-COLING 2024. [GitHub Repo]
* **Rajwal, S.**, & Aggarwal (2023). CNN-Based EEG Signal Analysis: A Systematic Review. In Archives of Computational Methods in Engineering. Springer Science & Business Media LLC. 10.1007/s11831-023-09920-1

* **Rajwal, S.** (2023). Design of a Chatbot for Children Based on Emotional Intelligence. In Intl. Conference on Innovative Computing & Communications, Springer. 10.1007/978-981-19-2821-5_57
* **Rajwal, S.** (2023) LiHiSTO: A Comprehensive List of Hindi Stopwords. Springer.[Manuscript], [GitHub Repo]
* Guo, Y., **Rajwal, S.**, et al. (2023) Generalizable Natural Language Processing Framework for Migraine Reporting from Social Media. AMIA Jt Summits Transl Sci Proc. PMID: 37350878; PMCID: PMC10283091
* S Das, D Walker, **Rajwal S.**, et al. (2023) Emerging Trends in Self-Harm: Sodium Nitrite and an Online Suicide Community. In-press at JMIR Mental Health. [Manuscript], [GitHub Repo]
* **Rajwal, S.**, & Chakraborty, P. Application of AI in Compiler Design. Best paper Award at 41st National Conference on Recent Trends in 5G Technology & Artificial Intelligence. Paper link.
* **Rajwal, S.** (2022). The Truth About Multitasking in Humans, IEEE Magazine, 10.1109/MWIE.2022.3155910

INDUSTRY EXPERIENCE

Eaton Corporation — Pune, India
Associate Software Engineer, Full Time — *2018 - 2020*

* Spearheaded R&D team to finalize lab layout for Software validation & Root cause analysis (RCA)
* Implemented Google smart home intents to provide user control of Eaton devices via voice commands
* Created Angular dashboard (Node.js functions) to push Eaton's manufacturing line data to Cosmos DB.
* Developed an app for wireless devices and implemented CRUD operations for 'routines' in smart devices.
* Generated test plans with 350 functional & Non-functional requirements leading to successful Gate 5 GO.

Accenture Research Lab — Bangalore, India
Innovations for Sustainability, R&D Senior Analyst Intern — *February - August 2022*

* Designed and developed a mechanism to determine and measure the frugality of a software solution
* Frugal factors considered are affordability, simplicity, quality, sustainability, security, and accessibility
* Tool also recommends best practices with trade-off analysis for a frugal software solution
* Presented the project results and demonstrated the PoC amongst the stakeholders and research team

SCHOLARSHIPS

Women in Natural Sciences Fellowship — Atlanta, USA
Emory University — *August 2023*

* Academic achievement based financial award to support PhD in Computer Science.

Summer School Scholarship — Milan, Italy
Mediterranean Machine Learning Summer School (M2L) — *Sept 2022*

* Grant awarded to attend the school and present research paper poster.

Post Graduate Scholarship — New Delhi, India
All India Council for Technical Education (AICTE) — *2020 - 2022*

* Recipient of a merit-based academic scholarship by AICTE, the Government of India.

Summer Research Scholarship — Hyderabad, India
Srini Raju Centre for IT and the Networked Economy Department — *July 2021 - Jan. 2022*

* Received a scholarship for undertaking research project for a duration of six months at ISB w/ Prof. Pamuru.

EXTRA-CURRICULAR

* Published an Amazon Alexa Skill for Alexa enabled devices
* Selected as Google's Women Techmakers Ambassador in the Cohort of 2022
* Attended and Volunteered at WiML workshop co-located with NeurIPS 2021
* Submission Reviewer at Grace Hopper Celebration 2022
* Authored technical articles for Towards Data Science, Geek Culture, & AV Data Science Blogathon 10, 13, 15
* Amongst the Top 25 Winners at 2021 edition of Microsoft Azure Developer Stories contest

RELEVANT COURSEWORK

Emory Spring 2024

* CS-572: Information Retrieval (Prof. Eugene Agichtein)
* BMI-510: Biostatistics for Machine Learning (Prof. J Lucas McKay)

Emory Fall 2023

* BMI-550: Applied Biomedical Natural Language Processing (Prof. Abeed Sarker)
* CS-557: Artificial Intelligence (Prof. Eugene Agichtein)
* CS-571: Natural Language Processing (Prof. Fei Liu)
* CS-534: Machine Learning (Prof. Joyce Ho)

TEACHING EXPERIENCES

* CS-325: Artificial Intelligence w/ Prof. Agichhtein (Emory, Spring 2024)
* ICCSC-05: Data Structures w/ Prof. Chakraborty (NSUT, Fall 2021)

SESSIONS CONDUCTED

* Hosted a session with Dr. Alpana Dubey (Sr. Tech. Researcher) to discuss R&D career
* Text Classification: Predicting 'Good' or 'Bad' Statements using NLP at Deeplearning.ai platform
* Demonstrated a chatbot application using Dialogflow, flask, and Python at Deeplearning.ai session
* Customer churn prediction model in Python using Azure ML as Microsoft Learn Student Ambassador
* Application of Reinforcement Learning in Financial Markets: build a Self-Learning Trading Agent w/ Azure
* Getting Started with MS Azure: Hands-on for various AI APIs using Microsoft's Intelligent Kiosk platform.

REFERENCES

Available upon request