SWATI RAJWAL

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EDUCATION

Emory University, USA   *2023 - 2028*
PhD, Computer Science & Informatics   CGPA: 3.959/4

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

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.

CURRENT PROJECTS

Social Isolation-related Suicide Circumstances within NVDRS   Atlanta, USA
w/ Centers for Disease Control and Prevention   *Sept. 2023 - ongoing*

* NLP-based approach to track trends in suicide circumstances using NVDRS dataset (Manuscript underway)
* Identified social determinants of health to find trends within marginalized communities and subgroups

Public Sentiment on Migraine Medications: A Twitter-Based Study   Atlanta, USA
w/ Mayo Clinic and ASU   *May 2024 - ongoing*

* Designing an NLP Pipeline for analyzing a tweet sentiment across migraine medications
* Preliminary work related to RoBERTa classification and sentiment analysis is available here.

PUBLICATIONS

* **Rajwal, S.**, Pandey, A., et al. 2024. Unveiling Voices: Identification of Concerns in a Social Media Breast Cancer Cohort via NLP. In CL4Health Workshop at **LREC-COLING** 2024. [Paper], [Code]

* **Rajwal, S.**, Eugene Agichtein, Abeed Sarker. 2024. Knowledge-Enhanced Few-Shot In-Context Learning for Medical Error Detection & Correction. In Clinical NLP workshop at **NAACL**'24. [Paper], [Code]

* Guo, Y., **Rajwal, S.**, et al. (2023) Generalizable Natural Language Processing Framework for Migraine Reporting from Social Media. AMIA Jt Summits Transl Sci Proc. [Paper], [Code]

* S Das, D Walker, **Rajwal S.**, et al. (2024) Emerging Trends of Self-Harm Using Sodium Nitrite in an Online Suicide Community: Observational Study Using NLP Analysis. JMIR Mental Health. [Paper], [Code]

* **Rajwal, S.** (2023) LiHiSTO: A Comprehensive List of Hindi Stopwords. Springer.[Paper], [Code]

* **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.**, & 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.**, & 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.

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.
* Carried out cross-group collaboration b/w Eaton & Amazon's Dev team to work on technical challenges.

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.

VOLUNTEERING

* Member and Mentor at Rewriting the Code since 2019
* Reviewer at Journal of the American Medical Informatics Association (JAMIA) 2024
* Co-organized 9th Social Media Mining for Health Research and Applications (#SMM4H) [Paper]
* Reviewer at MEDIQA-CORR@ ClinicalNLP (NAACL) 2024
* Attended and Volunteered at WiML workshop co-located with NeurIPS 2021

EXTRA-CURRICULAR

* Published an Amazon Alexa Skill for Alexa enabled devices
* Selected as Google's Women Techmakers Ambassador in the Cohort of 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

COURSEWORK

Emory Fall 2024

* BMI-500: Intro.to Ethical DS/Informatics (Profs. Matthew Reyna & Gari Clifford)

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-534: Machine Learning w/ Prof. Agichtein (Emory, Fall 2024)
* CS-325: Artificial Intelligence w/ Prof. Agichtein (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.