

Hari Shrawgi

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Education

Date	Degree	Institute	Performance
2019-2021	M. Tech AI	Indian Institute of Science	9.7/10 (Top of the batch)
2014-2018	B. Tech. Computer Science	National Institute of Technology Raipur	9.61/10
28/05/2014	AISSE (CBSE) for Class XII	Krishna Public School, Bhilai	89.6%
04/06/2011	AISSE (CBSE) for Class X	Krishna Public School, Bhilai	9.0/10.0

Certifications

Year	Certifications	Organization	Performance
2019	Graduate Aptitude Test for Engg. (GATE) CS	MHRD, India	AIR-6
2016	Machine Learning	Stanford University (Coursera)	97.3%
2015	Ethical Hacker	IIT Delhi	A+ grade
2012	ESOL Examination	University of Cambridge	Distinction

Professional Experience

- **Data Scientist Intern, Microsoft** (May 2020 – Jul 2020)
 - Interned with the 'Trustworthy Fundamentals' team at *Bing* which focuses on issues around Trust and Fairness
 - Developed ML/DL models to detect search queries which can lead to misinformation and hatred
 - Built a prototype twitter bot to check if a tweet is spreading political misinformation
- **R&D Software Engineer, Broadcom (CA Technologies)** (Jul 2018 - Apr 2019)
 - Worked as an R&D Engineer for *CA Single Sign-on* which is a large-scale enterprise security product
 - Led design and development of the Cross-Origin Resource Sharing (CORS) feature of CA SSO
 - Designed a new Block-chain based ledger system for new hires joining Broadcom
- **Research Intern, Australian National University** (Jun 2017 - July 2017)
 - Integrated Machine Learning with ongoing Biomedical research
 - Identified new Biomarkers for diagnosis of CFS/ME neural disease
 - Also developed a model to evaluate the performance of various pathological labs across Australia

Recent Projects

- **Detecting Suspicious Political Queries on Bing** (2020)
 - Developed a model to detect suspicious political queries in order to prevent misinformation leakage from Bing
 - Designed and implemented a *custom BERT* model based on manually engineered features along with query text
 - Improved the Precision/Recall of existing query detection pipeline from (87/06) to (90/58)
- **Sample complexity reduction for Deep Reinforcement Learning algorithms** (2020)
 - Developed a new technique to reduce training sample requirements for Hierarchical RL algorithms
 - The technique recycles the data collected at a lower temporal scale for training higher temporal layers
 - Reduced the training data required by *HDQN* for achieving maximum averaged reward **by 50%**
- **CNN based guide prediction for CRISPR/Cas9 gene editing tool** (2018)
 - Designed a **CNN model** trained over 400,000 data points to predict best SgRNA guides to be used by CRISPR
 - Eliminated the need for feature engineering, a major pain point of automating guide selection for CRISPR
 - The model outperformed all competing State-of-the-art models at the time
- **Bio-marker identification for Chronic Fatigue Syndrome (CFS)** (2017)
 - Used Neural Networks coupled with ROC curve analysis **to discover biomarkers for clinical diagnosis** of CFS
 - Substantiated the results with a systematic review on 60 NCBI research works and articles
 - The new biomarkers can lead to detection of CFS through pathological tests which was not feasible before
- **UNICEF Pregnancy Assistant App** (2017)
 - Winning android app of the UNICEF recognition award for a solution to Maternal & Newborn Health theme
 - Implemented text-to-speech for visually impaired or illiterate women and also **incorporated the Prime Minister's scheme** for free antenatal care to support financially weak patients
 - Used Agglomerative clustering to detect regions which require focused development in antenatal care

Recent Publications (2 among a total of 5 publications)

- Shrawgi, H. and Sisodia, D.S., 2019. Convolution neural network model for predicting single guide RNA efficiency in CRISPR/Cas9 system. *Chemometrics and Intelligent Laboratory Systems*, 189. (**Impact factor: 2.3**)
- Sharaff, A., Shrawgi, H. and Verma, A. 2018. Generic Document Classification Using Clustering, Centrality, and Voting. In: Mandal J.K. et al (eds.). *Proceedings of the International Conference on Computing and Communication Systems*. Lecture Notes in Networks and Systems, Vol. 24. Springer.

Awards & Community Service

- **UNICEF special award, Codeutsava:** In recognition of developing the best solution in Maternal Health theme (2017)
- Founded and led an **NGO - Inspire Foundation** and **taught 950 underprivileged students** throughout Raipur district (2016)
- Worked as a volunteer in **Unnat Bharat Abhiyan** to teach rural students in a remotely located govt. school (2017)