

## EDUCATION

2024	University of California San Diego, MS, Computer Science and Engineering <i>Coursework : Algorithm Design &amp; Analysis, Probabilistic Reasoning, Recommender Systems &amp; Web Mining</i>
2022	Indian Institute of Technology Kanpur, BTech, Mechanical Engineering, GPA : 9.22/10

## PUBLICATIONS

May 2021 Sep 2020	Long Short-Term Memory Implementation Exploiting Passive RRAM Crossbar Array [arXiv] H. Nikam, S. Satyam, S. Sahay, IEEE Transactions on Electron Devices <ul style="list-style-type: none"> <li>Encoded LSTM network parameters shared across the different time steps as the conductance-states of a passive RRAM (Resistive Random Access Memory) crossbar array to perform in-situ computations.</li> <li>Introduced a hybrid of stochastic gradient descent and Manhattan rule for training.</li> <li>Analysed the proposed implementation considering non-ideal hardware artefacts such as device-to-device variations, non-linearity, noise, etc.</li> </ul>
Jul 2021 Sep 2020	Energy-Efficient Implementation of Generative Adversarial Networks on Passive RRAM Crossbar Arrays [arXiv] S. Satyam, H. Nikam, S. Sahay, Under Review, IEEE Transactions on Neural Networks and Learning Systems <ul style="list-style-type: none"> <li>Implemented a hardware-aware simulation of GANs to synthesize realistic looking images of the MNIST dataset</li> <li>Introduced a weight-to-conductance mapping rule which allows for positive and negative weight matrices.</li> <li>Analysed the effects of true random noise as the input on the accuracy and energy efficiency of GANs.</li> </ul>

## EXPERIENCE

Aug 2022 May 2022	Software Engineer I, Uber, Bangalore <ul style="list-style-type: none"> <li>Part of the AdTech UI team for automating marketing self serve platform to share web-events with ad partners.</li> <li>Automated the flow for adding and validating data quality checks over the web-events to be shared.</li> <li>Introduced widgets and functionalities using React, Javascript and GraphQL for the conversion events manager</li> </ul>
Apr 2022 Sep 2021	Research Intern, Indian Institute of Technology Kanpur [report] Spectrum Based Fault Localization Using Graph Neural Networks, Prof. Subhajit Roy <ul style="list-style-type: none"> <li>Implemented the spectrum based fault localization problem as a graph neural network with test cases and components represented as graph nodes and edges that correspond to execution of components by test cases.</li> <li>Generated node embedding vectors by aggregation of messages from test nodes to component nodes.</li> <li>Computed component bug suspicion probabilities using embedding vectors through feed forward networks.</li> </ul>
Aug 2021 May 2021	Software Engineering Intern, Uber, Hyderabad <ul style="list-style-type: none"> <li>Implemented time series models to predict Uber Eats data such as city-wise gross bookings, web sessions etc.</li> <li>Implemented Bayesian Long Short Term Memory Network with uncertainty estimation.</li> <li>Analysed statistical time-series models and open source packages such as Prophet (Facebook), Orbit (Uber)</li> </ul>
Jul 2019 May 2019	Summer Intern, Talentpod Techserve, Bangalore [code] <ul style="list-style-type: none"> <li>Built a cognitive filtering based news recommendation system to recommend news based on email messages.</li> <li>Used news APIs for retrieving articles where the queries and keywords were extracted from user's emails such as keywords in the sender/receiver, subject, tf-idf ranked keywords in the mail body.</li> <li>Experimented with libraries such as NLTK, TensorFlow, Keras, scikit-learn for better classification, keyword extraction, and document analysis to improve the relevancy between the news articles and the user's mails.</li> </ul>

## TECHNICAL SKILLS

Languages	C++, Python, C, JavaScript, MATLAB, HTML, CSS
Misc.	Tensorflow, Keras, NLTK, Scikit-Learn, Numpy, Pandas, Git, Django, MongoDB, React, GraphQL

## ACHIEVEMENTS

Academic	Vibha Gold Medal for exceptional UG project among all graduating female students Academic Excellence Award for exceptional academic performance in sophomore year
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## EXTRACURRICULARS

Leadership	Senior Executive, Entrepreneurship Cell, IIT Kanpur
Positions	Student Guide and Academic Mentor, Counselling Service, IIT Kanpur
Talks	Department of Cognitive Science, IIT Kanpur <ul style="list-style-type: none"> <li>The Circular Problem</li> <li>Is Perception Intelligent?</li> <li>Sensation v/s Perception</li> </ul>