Sweta Karlekar

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Skills

Python, Java, Machine Learning, AI, Computer Vision, Natural Language Processing, TensorFlow, PyTorch, Deep Learning, XGBoost, SQL, Linux, Bayesian modeling, Bayesian statistics, Causal Inference, Causal Machine Learning, Causal Discovery, Experimentation, Agile

Related Work Experience

Meta Applied Machine Learning Research Scientist, *Bayesian Modeling and Causal Inference* Oct 2020 – present

- Founded and acted as tech lead for sub-team pillar of Causal Inference: responsibilities included sourcing, building, and supporting cross-functional (XFN) collaborations; roadmapping and KPI development; driving architectural discussions; and motivating research directions
- Was lead engineer on multiple Bayesian + Causal Inference projects from prototyping to productionization, started and contributed to XFN collaborations that resulted in > $750M/yr of revenue impact
- Gained experience with various Bayesian models/techniques including Bayesian regressions, Gaussian Processes, conjugate priors, Bayesian Structural Time Series (BSTS), Bayesian contextual multi-armed bandits, etc., and with causal inference approaches like Difference-in-Difference, Regression Discontinuity, Instrumental Variables, Propensity Scores, Bayesian hypothesis testing, and missing data de-biasing, etc.

Facebook Machine Learning Engineering Intern, *Anomaly Detection* May – Aug 2019

- Designed and built an anomaly detection model to remove mismatched candidate recommendations as part of the Recruiting org
- Implemented a voting ensemble method to combine performances of various models, including regressions, sparse NNs, and decision trees

Yelp Applied Machine Learning Intern, *Survival Analysis* Jan – May 2019

- Developed WTTE-RNN (Weibull Time to Event RNN) models to produce survival curves and predict business and advertiser retention
- Explored and created feature sets of various advertiser signals to deploy ML models at scale

Google AI Research Mentoring Program, *Deep Learning & Interpretability* Sep 2018 – Sep 2019

- Nominated by WiNLP workshop at NAACL to collaborate and be mentored by Google Brain researchers in AI-related topics
- Mentored by Dr. Been Kim on interpretability and democratizing deep learning models

Walt Disney Company Emerging Technologies Intern, *Natural Language Topic Modelling* Aug – Dec 2018

- Leveraged Oracle ConText packages and SQL developer toolkits to extract salient themes from large amounts of SMS data
- Developed methods using regular expressions to automate responses for over 20% of incoming SMS messages
- Created models using Google's BigQuery ML to predict demographic information of users who visit Disney websites to better serve ads

MITRE Corp. Deep Learning and Artificial Intelligence Intern, *Computer Vision and Generative Models* May – Aug 2018

- Utilized generative adversarial networks, specifically SD-GANs and PG-GANs, to generate training images for classifiers to detect objects in satellite imagery (Python)
- Performed literature reviews on the current state of neural computer vision and gave briefings on CNNs and CapsuleNets (https://github.com/swkarlekar/summaries)

UNC Chapel Hill Research Assistant, *Deep Learning and Natural Language Processing* Aug 2017 – Aug 2018

- First-authored three papers working in Dr. Mohit Bansal's Deep Learning + NLP Lab in the UNC Computer Science Dept.
- Projects: (1) Used recurrent neural networks (RNNs) + natural language processing (NLP) techniques to identify the linguistic characteristics of early signs of Alzheimer's and dementia, (2) Used various neural models such as CNNs, RNNs, and CNN-RNN hybrids to perform text classification and visualization on circumstances of domestic abuse

Refereed Publications

Karlekar, S., Bansal, M. (2018, Nov). *SafeCity: Understanding Diverse Forms of Sexual Harassment Personal Stories.* In EMNLP 2018, Brussels, Belgium .

Karlekar, S., Niu, T., Bansal, M. (2018, June). *Detecting Linguistic Characteristics of Alzheimer's Dementia by Interpreting Neural Models.* In NAACL 2018, New Orleans.

Karlekar, S., Bansal, M. (2018, June). *#MeToo: Neural Detection and Explanation of Language in Personal Abuse Stories.* In NAACL-WiNLP 2018, New Orleans.

Becker, S.J., Daughtry, C.S.T., Jain, J., & **Karlekar, S.** (2015, December). *Developing a Method to Mask Trees in Commercial Multispectral Imagery*. Poster presented at the American Geophysical Union Fall Meeting, San Francisco, CA.

Education

University of North Carolina at Chapel Hill Aug 2016-May 2020

B.S. Computer Science, Entrepreneurship Minor -- GPA: 3.87/4.00, Major GPA: 3.94/4.00

Scholarships: STEM Diversity Scholarship, Chancellor's Science Scholarship (Full Ride, Academic Merit)

Relevant Graduate Course Work: Deep Learning and Natural Language Processing, Conversational Models in Artificial Intelligence