

Mukul Bhutani

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Experience

Google

SOFTWARE ENGINEER

- Developing and training models for performing personalized recommendations on Google Discover.
- Exploring how Large Language Models (LLMs) can be helpful in psychologically stressful situations.

Mountain View, CA

February 2022 – Present

Apple

APPLIED RESEARCH ENGINEER

- Developing and training new models for determining the ranking of search results on App Store.

Cupertino, CA

September 2020 – February 2022

Amazon

SOFTWARE DEVELOPMENT ENGINEER II

- Designed and developed scalable and easy to use algorithms and platforms for solving machine learning related problems.
- Instructor for Amazon's internal machine learning bootcamps.

Bangalore, India

October 2017 – April 2018

SOFTWARE DEVELOPMENT ENGINEER

- Lead developer for EntityPredictionService (EPS), a tool for automatically generating end to end machine learning pipelines.

July 2015 – October 2017

Education

Carnegie Mellon University, Pittsburgh

SCHOOL OF COMPUTER SCIENCE

MASTER OF SCIENCE IN LANGUAGE TECHNOLOGIES

- Relevant Courses: Deep Learning, Intro to Machine Learning, Neural Networks for NLP, Intro to Optimization.
- Graduate Research Assistant

GPA: 3.95/4.0

August 2018 - August 2020

Birla Institute of Technology and Science (BITS) Pilani, India

BACHELOR OF ENGINEERING (HONS) IN COMPUTER SCIENCE

- Relevant Courses: Linear Algebra, Data Structures and Algorithms, Parallel Computing, Compiler Construction.

GPA: 9.70/10.0

August 2011 - July 2015

Publications

An Empirical study to understand the Compositional Prowess of Neural Dialog Models

Vinayshekhar Kumar, Vaibhav Kumar, Mukul Bhutani, Alexander Rudnicky

Proceedings of the Third Workshop on Insights from Negative Results in NLP, [ACL 2022](#)

- Investigated generalization, syntactic robustness, and semantic capabilities of neural dialog models.

Sinkhorn-Flow: Predicting Probability Mass Flow in Dynamical Systems Using Optimal Transport

Mukul Bhutani, Thomas Magelinski and Zico Kolter

Optimal Transport Workshop, [NeurIPS 2019](#)

Spotlight Talk

- Predicted how discrete distributions evolve over time using optimal transport.
- Predicted the evolution of factions in social networks.

WriterForcing: Generating more interesting story endings

Mukul Bhutani*, Prakhar Gupta*, Vinayshekhar BK*, Alan W Black

Storytelling Workshop, [ACL 2019](#)

- Generated diverse and interesting story endings by forcing the model to attend on the keywords present in the story.

Low-rank geometric mean metric learning

Mukul Bhutani, Pratik Jawanpuria, Hiroyuki Kasai, Bamdev Mishra

Geometry in Machine Learning (GiMLi) Workshop, [ICML 2018](#)

- Proposed a low-rank approach to learning a Mahalanobis metric from data.
- Jointly learned a low-dimensional subspace where the data reside and the Mahalanobis metric that appropriately fits the data.

A two-dimensional decomposition approach for matrix completion through gossip

Mukul Bhutani, Bamdev Mishra

Emergent Communication Workshop, [NeurIPS 2017](#), [Patent Granted](#)

- Developed a novel two-dimensional decomposition approach for matrix completion.
- The result was a setup which is lot more secure and potentially highly parallelizable compared to traditional approaches.

MRNet-Product2Vec: A Multi-task Recurrent Neural Network for Product Embeddings

Arijit Biswas, Mukul Bhutani, Subhajit Sanyal

European Conference on Machine Learning ([ECML-PKDD 2017](#))

- Developed a dense and low-dimensional product embedding where a diverse set of signals related to a product were explicitly injected into its representation.
- Used multimodal auto-encoder to learn language agnostic embeddings.

Skills

Languages Python, Scala, Java, C, C++

Frameworks Apache Spark, PyTorch, Hadoop, TensorFlow, MATLAB