

# Mukul Bhutani

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## Experience

### Apple

APPLIED RESEARCH ENGINEER

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

Cupertino, CA

September 2020 – Present

### 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

### 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](#)

- 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