

VRAJ SHAH

Phone: (+1) 858-291-2697
Email: vps002@eng.ucsd.edu

Web: pvn25.github.io
LinkedIn: linkedin.com/vraj

EDUCATION	University of California , San Diego, CA <i>PhD</i> , Computer Science. Thesis Advisor: Prof. Arun Kumar	Sept 2016 - March 2022 (Expected)
	Indian Institute of Technology , Indore, India <i>Bachelor of Technology</i> , Computer Science & Engineering.	Aug 2012 - June 2016
RESEARCH EXPERIENCE	Graduate Student Researcher <i>University of California, San Diego</i>	Sept 2016 - Present
	<ul style="list-style-type: none">• SortingHat. Automate data preparation tasks for Automated machine learning (AutoML) by formalizing and benchmarking them to objectively validate and improve AutoML platforms.• SpeakQL. Developed a system for making spoken SQL querying effective and efficient. The speech driven interface allows the users to query in any domain with infinite vocabulary using interactive query correction.• Hamlet. Analyzed the accuracy effects of joins on high-capacity ML algorithms, when learning over normalized data to reduce the data sourcing burden for ML.	
	Research Assistant <i>University of Alberta, Canada</i>	May 2015 - July 2015
INDUSTRY EXPERIENCE	<ul style="list-style-type: none">• Developed a Big Data Adaptor as Eclipse plugin which efficiently handles GitHub's data dump. The tool saves developers' time and effort in data prep for GitHub analysis.	
	Research Intern <i>Microsoft</i>	June 2018 - Sept 2018
	<ul style="list-style-type: none">• Implemented computational graph-level optimizations and analytical cost model for ML operators inside Microsoft's deep learning system for inference.	
PUBLICATIONS	Research Intern <i>Infor Corporation</i>	June 2017 - Sept 2017
	<ul style="list-style-type: none">• Integrated ML algorithms inside LogicBlox forecasting engine to scale training with data parallelization strategy.	
	<i>An Empirical Study on (Non-)Importance of Cleaning Categorical Duplicates before ML.</i> Vraj Shah , Thomas Parashos, and Arun Kumar. Under Submission Paper .	
	<i>Towards Benchmarking Feature Type Inference for AutoML Platforms.</i> Vraj Shah , Jonathan Lacanlale, Premanand Kumar, Kevin Yang, Arun Kumar. SIGMOD 2021 Paper .	
	<i>SpeakQL: Towards Speech-driven Multimodal Querying of Structured Data.</i> Vraj Shah , Side Li, Arun Kumar, Lawrence Saul. SIGMOD 2020 Paper .	
	<i>Demonstration of SpeakQL: Speech-driven Multimodal Querying of Structured Data.</i> Vraj Shah , Side Li, Kevin Yang, Arun Kumar, Lawrence Saul. SIGMOD 2019 (<i>Demo track</i>) Paper .	

The ML Data Prep Zoo: Towards Semi-Automatic Data Preparation for ML.

Vraj Shah, Arun Kumar.

DEEM Workshop, SIGMOD 2019 | [Paper](#).

SpeakQL: Towards Speech-driven Multi-modal Querying.

Vraj Shah.

SIGMOD 2019 (*Student Research Competition*) | **Awarded Second Runner-up** | [Paper](#).

Are Key-Foreign Key Joins Safe to Avoid when Learning High Capacity Classifiers?

Vraj Shah, Arun Kumar, Xiaojin Zhu.

VLDB 2018 | [Paper](#).

SpeakQL: Towards Speech-driven Multi-modal Querying.

Dharmil Chandarana, **Vraj Shah**, Arun Kumar, Lawrence Saul.

HILDA Workshop, SIGMOD 2017 | [Paper](#).

GitHub's Big Data Adaptor: An Eclipse Plugin.

Ali Sajedi, **Vraj Shah**, Eleni Stroulia.

IBM CASCON 2015 | [Paper](#).

RESEARCH IMPACT

Improving Feature Type Inference Accuracy of TFDV with SortingHat

Vraj Shah, Kevin Yang, and Arun Kumar. [Technical Report](#).

Models from project SortingHat explored for production use by TensorFlow Data Validation in collaboration with Google

PATENTS

Speech Based Structured Querying

Arun Kumar, **Vraj Shah**, Dharmil Chandarana

AWARDS

Second Runner-up, ACM SIGMOD Student Research Competition

2019

NSF Travel Award to attend ACM SIGMOD

2019

NSF Travel Award to attend VLDB

2018

Microsoft Travel Award to attend ACM SIGMOD

2017

Research Experience program honor for poster at *University of Alberta International Research Symposium*

2015

MITACS Globalink Research Award

2015

DAAD WISE Fellowship

2015

SERVICE

Program Committe: VLDB 2022

External Reviewer: VLDB 2019, VLDB Demo 2018

Student Research Mentorship:

Francisco Cornejo-Garcia, BS, Cypress College

Summer 2020

Kevin Yang, BS, UCSD.

Fall 2019 - Spring 2020

Jonathan Lacanlale, BS, California State University, Northridge

Summer 2019

Thomas Parashos, BS, California State University, Northridge

Summer 2019

SKILLS

Languages: C, C++, Java, Python, R, SQL.

Web Development: HTML, CSS, JavaScript, PHP.

Tools & Libraries: Scikit-learn, Dask, Keras, Tensorflow, Matlab, Eclipse, AWS EC2.

TEACHING EXPERIENCE

Teaching Assistant - Advanced Data Analytics Systems

Winter 2020

Teaching Assistant - Database System Implementation

Spring 2020