

Pratyay Banerjee

PERSONAL INFO	21 OCT, 1992	PH - +1-4802427693
	Apt 32, 910 E Lemon Street Tempe, AZ-85281, USA Citizenship : India, F1 Visa	Email - pbanerj6@asu.edu Scholar , LinkedIn , Website , Github
INTERESTS	Natural Language Understanding, Neural Reasoning, Vision + Language, Question Answering	
EDUCATION	Ph.D., Computer Science & Engineering <i>Arizona State University</i> , USA	Aug 2018 - Current
	GPA : 4.0 / 4.0	
	Bachelor of Engineering, Computer Science & Engineering <i>Jadavpur University</i> , India	July 2014
	GPA : 8.8 / 10	
PUBLICATIONS	<i>Unsupervised Pronoun Resolution via Masked Noun-Phrase Prediction</i> M. Shen*, P. Banerjee *, C. Baral	ACL 2021
	<i>WeaQA: Weak Supervision via Captions for Visual Question Answering</i> P. Banerjee , T. Gokhale, Y. Yang, C. Baral	Findings of ACL 2021
	<i>Constructing Flow Graphs from Procedural Cybersecurity Texts</i> K. Pal, K. Kashiwara, P. Banerjee , S. Mishra, R. Wang, C. Baral	Findings of ACL 2021
	<i>Self-Supervised Test-Time Learning for Reading Comprehension</i> P. Banerjee , T. Gokhale, C. Baral	NAACL, 2021
	<i>Self-supervised Knowledge Triplet Learning for Zero-shot QA</i> P. Banerjee , C. Baral	EMNLP, 2020
	<i>MUTANT: A Training Paradigm for Out-of-Distribution Generalization in VQA</i> T. Gokhale*, P. Banerjee *, C. Baral, Y. Yang	EMNLP, 2020
	<i>Video2Commonsense: Generating Commonsense Descriptions to Enrich Video Captioning</i> Z. Fang*, T. Gokhale*, P. Banerjee , C. Baral, Y. Yang	EMNLP, 2020
	<i>VQA-LOL: Visual Question Answering under the Lens of Logic</i> T. Gokhale*, P. Banerjee *, C. Baral, Y. Yang	ECCV, 2020
	<i>Careful Selection of Knowledge to solve Open Book Question Answering</i> P. Banerjee , K. Pal, A. Mitra, C. Baral	ACL, 2019
	<i>VQA with Annotation-Efficient Zero Shot Learning under Linguistic Domain Shift</i> P. Banerjee , T. Gokhale, Y. Yang, C. Baral	SSL@NeurIPS, 2020
	<i>Knowledge Guided Named Entity Recognition for BioMedical Text</i> P. Banerjee *, K. Pal*, M. Devarakonda, C. Baral	ACM Health
	<i>Reasoning about Effects of Actions using Transformers</i> P. Banerjee , C. Baral, M. Luo, A. Mitra, K. Pal, T. C. Son, N. Varshney	Under Review
	<i>Weakly-Supervised Learning-to-Rank and Knowledge Segregation for Open Book Science QA</i> P. Banerjee , C. Baral	Under Review
	<i>Unsupervised Question Answering: Trends, Challenges and Outlook</i> P. Banerjee , T. Gokhale, C. Baral	Under Review
	<i>Natural Language QA Approaches using Reasoning with External Knowledge: A Survey</i> C. Baral, P. Banerjee , K. Pal, A. Mitra	CoRR, 2020
	<i>Exploring ways to incorporate additional knowledge to improve NLQA</i> A. Mitra*, P. Banerjee *, K. Pal*, S. Mishra*, C. Baral	CoRR, 2019
	<i>Explanation ReGeneration using Language Models and Iterative Re-Ranking</i> P. Banerjee	TextGraphs-13, 2019
WORK EXPERIENCE	ASU - Cognition and Intelligence Lab	Aug 2018-Current
	<i>Research Assistant:</i> Advisor Prof. Chitta Baral. Working on Neural Reasoning, Natural Language Understanding and Vision+Language. Also working on DARPA CHES program to build NLP and Vision tools for Human-Computer Collaborative Software Security.	
	Flipkart - User Identity & Insights	Nov 2014 - August 2018
	<i>Senior Software Development Engineer 3:</i> Built highly scalable systems to compute and serve User's identity information, personalization content and fraud detection data. Designed and developed components using Hadoop frameworks and tools. Developed User address based fraud detection leveraging User Graph. Feature enrichment and identification pipelines for supervised ML models such as Credit and Income Modelling of Users	

* Equal Contribution

using E-Commerce affinities and User Graph attributes. Designed and developed internal tools for change-event propagation from MySQL to Elasticsearch, MySQL cluster management, One stop tool for User escalations and production issue management. Secured User PII data in system-system interactions and Big data usage. Developed several microservices like authentication and authorization services, address management services, rate limiting and rule engine based services. Worked on ML model engineering and productionising to ML problem modelling and data science. Designed ML model for creating selective incentives to push Users to higher segments, where a segment is defined as transactions per customer, lifetime value, gross merchandise value etc.

Yahoo SDC- International Sports Team

July 2014 - Oct 2014

Software Development Engineer 1: Enabled scaling of Sports Feed processing and extended APIs to support more sports to be served at Yahoo web scale.

Indian Statistical Institute, Kolkata - Crypto Lab

July 2013 - July 2014

Research Assistant: Advisor Prof. Goutam Paul. A Graph-Based FHE based on Homomorphic Bit Vector Encoding. Evaluated multiple schemes to exploit the hardness of graph path traversal algorithms and Homomorphic Bit Vector Encoding to derive a graph based FHE scheme.

IIT Kharagpur, India - CNERG Lab

Summer 2013

Research Assistant: Advisor Prof. Bivas Mitra. Detection and analysis of dynamic communities in time varying networks. We contrasted several community detection algorithms over time varying networks, built a test bed to analyze these algorithms. Derived useful insights of few community datasets, using these implementations.

SKILLS

Data Science : PyTorch, Tensorflow, Keras, Scikit Learn, Apache Spark ML, Pandas
Languages : Python, Java, C, C++, Scala
BigData : Spark, MR, Hive, Hadoop, Pig

AWARDS & HONORS

<i>University Doctoral Fellowship</i>	2018, 2019, 2020
<i>Graduate College Travel Award</i>	2019, 2020
<i>Engineering Graduate Fellowship</i>	2019, 2020
<i>CS PhD Conference Fellowship</i>	2020
<i>Flipkart Hackathon Winner (200 Teams)</i>	2016, 2018
<i>Microsoft AI Challenge Top 5 (500 Teams)</i>	2018
<i>Top 0.001% in the Joint Entrance Exam of the IITs & NITs (1.3M students)</i>	2010
<i>CBSE Undergraduate Fellowship</i>	2010-2014

TEACHING

<i>Teaching Assistant: Principles of Programming</i>	2018
<i>Teaching Assistant: Natural Language Processing</i>	2019,2020
<i>Teaching Assistant: Frontier Topics in Vision and Language</i>	2021

SERVICE & LEADERSHIP

Teaching and Research Awards Reviewer for the GPSA at ASU: 2019,2020.
Reviewer: NAACL 2021, AAAI 2021, CIKM 2020, EMNLP 2020, ACL 2020-21, EMNLP Workshop 2019
Have lead and managed teams of size 2-4 on multiple projects in Flipkart.