Abhidip Bhattacharyya

PhD Candidate – Department of Computer Science – CLEAR Lab
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Education

- **Doctor of Philosophy in Computer Science(PhD)** — **Boulder**
  University of Colorado Boulder — *2017–2023*
- **Master of Technology in Computer Science** — **Kolkata, India**
  Indian Statistical Institute — *2012–2014*
- **Bachelor of Technology in Computer Science** — **Kolkata, India**
  West Bengal University of Technology — *2007–2011*

Thesis

- **PhD thesis (2023):** *Multimodal Semantic Role Labeling and its applications*
  - Adviser: Prof. Martha Palmer and Prof. Christoffer Heckman
- **Master's thesis (2014):** *Use of Gaussian Pyramid for MSER Based Text Extraction From Scene Image*
  - Adviser: Dr. Ujjwal Bhattacharya
  - nominated for best masters thesis 2014

Awards & Honors

- 2023 - Nelson Prager Family and James Martin Endowed Graduate Fellowship, CU Boulder
- 2022 - David T Spalding Graduate Teaching Fellowship, CU Boulder
- 2022 - University of Colorado Boulder Graduate School International Travel Grant award, CU Boulder
- 2020 - Outstanding Service Awards, CU Boulder
- 2019 - Summer Research fellowship for best TA, CU Boulder
- 2018 - Best TA award, CU Boulder
- 2016 - Outstanding paper award
- 2012-2014 - Book grant award, Indian Statistical Institute
- 2012 - GATE Scholarship for 2 years during Master's studies. Sponsored by Govt. of India

Publication

[P1] **Bhattacharyya, A.**, Palmer, M., & Heckman, C. CRAPeS: Cross-modal Annotation Projection for Visual Semantic Role Labeling, *in submission to* *SEM

[P2] **Bhattacharyya, A.**, Mauceri, C., Palmer, M., & Heckman, C. (2022, June). Aligning Images and Text with Semantic Role Labels for Fine-Grained Cross-Modal Understanding. In Proceedings of the Thirteenth Language Resources and Evaluation Conference (pp. 4944-4954).

[P3] Chittimalli, P. K., Prakash, C., Naik, R., & **Bhattacharyya, A.** (2020, February). An approach to mine SBVR vocabularies and rules from business documents. In Proceedings of the 13th Innovations in Software Engineering Conference on Formerly known as India Software Engineering Conference (pp. 1-11).

[P4] Chittimalli, P. K., & **Bhattacharyya, A.** (2019, February). Sbvr-based business rule creation for legacy programs using variable provenance. In Proceedings of the 12th Innovations on Software Engineering Conference (Formerly Known As India Software Engineering Conference) (pp. 1-11).

[P5] **Bhattacharyya, A.**, Chittimalli, P. K., & Naik, R. (2018, February). Relation identification in business rules for domain-specific documents. In Proceedings of the 11th Innovations in Software Engineering Conference (pp. 1-5).

[P6] **Bhattacharyya, A.**, Chittimalli, P. K., & Naik, R. (2017, February). An approach to mine business rule intents from domain-specific documents. In Proceedings of the 10th Innovations in Software Engineering Conference (pp. 96-106).

Talks

- 'Decoding Semantics of Vision: A computational linguistics approach of semantic role analysis for images'- Applied Linguistic Department, IOWA State Unviersity, March 20, 2023
- 'Visual Semantic Role Labeling'- Fritz group, CISPA Helmholtz Center for Information Security, March 17, 2023
- 'Aligning Images and Text with Semantic Role Labels for Fine-Grained Cross-Modal Understanding', LREC 2022, Palais du Pharo in Marseille, June 23, 2022

Teaching

Instructor

- Data Structure(Undergrad. level CSCI 2270), CU Boulder (Summer 2023, Summer 2022)
- Natural Language Processing (Undergrad. level CSCI 3832), CU Boulder (Spring 2021)

Guest Lecture

- Advanced Topics in Computational Linguistics(Ling 7800) CU Boulder, taught by Prof. Martha Palmer(Fall 2020, Spring 2019)
- Natural Language Processing (Grad. level CSCI 5832) CU Boulder, taught by Prof. Katherina Kann (Spring 2020, Fall 2020)
- Advanced Data Structure (Undergrad. level CSCI 2275), CU Boulder, taught by Prof. Maciej Zagrodski, (Fall 2021)

Teaching Assistant

- **Graduate Level**

- Linear and Integer Programming (Grad. level CSCI 5454), CU Boulder, Spring 2022
- Advanced Data Structure (Grad. level CSCI 7000), CU Boulder, Fall 2022
- Advanced Algorithm (Grad. level CSCI 5654) CU Boulder, Spring 2023

○ **Under-Graduate Level**

- Data Structure (Undergrad. level CSCI 2270), CU Boulder, Fall 2020, Spring 2020, Fall 2019, Spring 2019, Fall 2018, Spring 2018, Fall 2017
- Advanced Data Structure (Undergrad. level CSCI 2275), CU Boulder, Fall 2021

Industry Appointments

○ **Rakuten Institute of Technology** **San Mateo, USA**
Research Intern *2019*
Worked on creating PoC of text retrieval for images in display advertisement. Worked with Dr. Youngjoo Chung

○ **TATA Reserach Development and Design Center** **Pune, India**
Researcher *2014–2017*
Created a system to mine business rules from domain specific documents using natural language processing techniques. Developed an UI plugin for annotation and formalised representation of those extracted rules. Worked with Pavan Chittimalli and R.D. Naik

○ **Tech Mahindra** **Kolkata, India**
Research intern *2013*
Developed an social analytic tool to detect sentiments, aspects and product class of user reviews. Worked under supervision of Nirmalya Chattopadhyay

Academic Appointments

○ **Summer Research Assistant**

- DARPA, AIDA project, CU Boulder, Summer 2018

○ **Project-linked Person**

- Computer Vision & Pattern Recognition Unit (CVPRU), Indian Statistical institute,
  Developed an approach for detection and correction of italics in printed text in Bengali script using Virtual Stroke. Worked under supervision of Prof. Bidyut Baran Chaudhuri

○ **Summer Intern**

- Computer Vision & Pattern Recognition Unit (CVPRU), Indian Statistical institute, Summer2010 & 2011
  Worked on collecting handwritten data (in Bengali) in digitized form and preprocessing the data for further analysis. Designed a framework for detection and recognition of vowel modifiers appearing in offline handwritten isolated Bengali characters.

Service

○ **Assistant Organizer of SemEval 2021**
○ **Reviewer**

- *SEM, 2023

- **External Review**
  - IJCAI, 2022
  - AAAI, 2019
  - CoNLL, 2018
  - Coling, 2018
  - EMNLP, 2018
- **Lead TA, Center for Teaching and Learning (CTL)**, CU Boulder, 2019
  - Worked as liaison between Department of Computer Science and CTL
  - Organized TA monthly meetings and
  - Organized TA module training
  - Provided video taped consultancy to TAs
  - Hiring TAs for department
- **Advocacy and Outreach**
  - Presented work at Computer Science Open house to promote our department to prospective PhD student, 2023
  - Presented poster titled "Multimodal Semantic Role Labeling" at CLASIC open house 2022 for prospective CLASIC students.
  - Participated at CLASIC lighting talks to motivate CS undergrad students for considering career in Computational Linguistic
  - Presented our work one "Multimodal semantic role labeling" at Computer Science Open house, 2020 for prospective graduate students
  - Participate in TA panel on Sharing Teaching Experience as a part of TA module for first time TAs
  - Conducted a presentation on Supporting Undergraduate Students Facing Adversity at Fall intensive 2019 hosted by Center for Teaching and Learning, CU Boulder
  - Hosted NLP table to promote Computational Linguistic researches at CU Boulder at Computer Science Graduate Program Recruitment day, 2017, 2018