Purva Tendulkar

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Education

Columbia University — New York, NY, USA
PhD in Computer Science — *Aug. 2021 – ongoing*
CGPA: NA

Georgia Institute of Technology — Atlanta, GA, USA
Master of Science in Computer Science (Specialization: Machine Learning) — *Aug. 2018 – Aug. 2020*
CGPA: 4.0/4.0

College of Engineering Pune — Pune, MH, India
Bachelor of Technology in Computer Science — *Aug. 2014 – May 2018*
CGPA: 9.14/10.0

Research Interests

Machine Learning, Computer Vision, Human Computer Interaction, Natural Language Processing

Publications

- **SOrT-ing VQA Models: Improving Consistency via Gradient Alignment**
  Sameer Dharur, **Purva Tendulkar**, Dhruv Batra, Devi Parikh, Ramprasaath R. Selvaraju
  Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2021
  Interpretable Inductive Biases and Physically Structured Learning (NeurIPS), 2020

- **Feel The Music: Automatically Generating A Dance For An Input Song**
  Purva Tendulkar, Abhishek Das, Aniruddha Kembhavi, Devi Parikh
  International Conference on Computational Creativity (ICCC) 2020, ***Oral***

- **SQuINTing at VQA Models: Interrogating VQA Models with Sub-Questions**
  Ramprasaath R. Selvaraju, **Purva Tendulkar**, Devi Parikh, Eric Horvitz, Marco Tulio Ribeiro, Besmira Nushi, Ece Kamar
  Conference on Computer Vision and Pattern Recognition (CVPR) 2020, ***Oral (5.7% acceptance rate)***

- **Trick or TReAT: Thematic Reinforcement for Artistic Typography**
  Purva Tendulkar, Kalpesh Krishna, Ramprasaath R. Selvaraju, Devi Parikh
  International Conference on Computational Creativity (ICCC) 2020, ***Oral***

Work Experience

University of California San Diego — Aug. 2020 – Mar. 2021
Research Staff | Supervisor: Prof. Xiaolong Wang — *San Diego, CA*

- Developing deep learning models to understand object-centric visual dynamics via intuitive physics models for Facebook's PHYRE dataset.
- Developing novel, modularized approaches for encoding heuristics of object interactions in order to allow the system to generalize better to complex unseen configurations and avoid problems of overfitting.

Georgia Institute of Technology — Aug. 2019 – Aug. 2020
Graduate Research Assistant | Supervisor: Prof. Devi Parikh — *Atlanta, GA*

- Worked on problems related to Creative AI and Vision & Language.
- Worked on using AlexNet and ResNet-based autoencoders and Facebook's Pythia MMF models.
- Presented oral talks at ICCC 2019, ICCC 2020 and CVPR 2020.

AiBee May 2019 – Aug. 2019

Research Intern | Supervisors: Chunhui Gu, Juan Carlos Niebles, Prof. Silvio Savarese *Palo Alto, CA*

- Improved existing models for event detection, contributing over 5k+ lines of code to an existing codebase via Git.
- Developed an LSTM-based deep learning model which can detect events based on trajectories of people in a shopping mall and learns to distinguish between staff and customers.

Nanyang Technological University May 2017 – Aug. 2017

Research Assistant | Supervisor: Prof. Arvind Easwaran *Singapore*

- Modeled the Stuxnet attack – a notorious worm that affects Cyber-Physical Systems.
- Performed extensive vulnerability analysis at different levels of abstraction in the Berkeley Metropolis environment.

Indian Institute of Technology, Bombay May 2016 – Jul. 2016

Software Development Intern | Supervisor: Prof. Varsha Apte *Mumbai, India*

- Developed a Django-based framework for automatically evaluating programming assignments of courses at IIT.
- Worked as a full-stack developer to add engaging features for both instructors and students.

Programming Skills

Languages: Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS
Frameworks: PyTorch, TensorFlow, Django
Version Control: Git

Awards and Achievements

- Recipient of the Presidential Fellowship at Columbia University (2021-2025).
- Winner of the Best Presentation Award at ICCC 2019.
- Recipient of the Pratibha Eaton Excellence Award for women engineering students in 2017.