Prachi Rahurkar

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Education

Oregon State University — Corvallis, OR
Master of Science - Computer Science, GPA: 3.71/4 — 2018–2020

Coursework: Natural Language Processing, Networks in Computational Biology, Intelligent Agents and Decision-Making, Computer Vision- I and II, Deep Learning, Machine Learning

University of Mumbai — Mumbai, India
Bachelor of Engineering - Computer Science, GPA: 8.26/10 — 2014–2018

Coursework: Analysis of Algorithms, Data Structures, Artificial Intelligence, Machine Learning, Soft Computing, Data Mining, Databases, Parallel and Distributed Systems, Theoretical Computer Science

Research Experience

- **Question Answering** — Sep 2019 – present
  MS Thesis (Advisor: Dr. Prasad Tadepalli) — *Oregon State University*
  - I am working on automating the generation of text adversarial passages and building reading-comprehension question-answering models robust to the adversarial passages.
  - Performed categorization of the successful adversarial text attacks that misdirect model predictions, based on the data collected in a user study that I conducted. (Published at NeurIPS workshop)
- **Brain Network Analysis** — Sep 2020 – Dec 2020
  Research Project (Advisor: Dr. Stephen Ramsey) — *Oregon State University*
  - Performed structural analysis on human connectome and chimpanzee connectome data.
  - Implemented graphical measures such as centralities, motifs, clustering coefficients, max-flow, analysis of unique edges, etc. among others and showcased differences between the two brain networks.
- **NaYaNa for Universal Literacy** — Jul 2017 – Apr 2018
  Research Intern (Supervisor: Dr. Nagarjuna G.) — *Homi Bhabha Center, TIFR*
  - Implemented training data generation algorithm given NaYaNa script (of alphabets and numbers)
  - Developed a handwritten character recognition system for the script NaYaNa using feature extraction techniques based on character geometry, with the help of stacked neural networks in implementation.
- **NLP for Regional Languages** — May 2018 – Aug 2018
  Independent Study (Advisor: Dr. Jayant Gadge) — *TSEC, Mumbai*
  - Implemented English-to-Marathi translation and worked on understanding the effects of back-translations.
  - Implemented poetry generation system using SeqGAN and worked on enhancing its architecture.

Professional Experience

- **Machine Learning Engineer (Part-time)** — Aug 2020 - Dec 2020
  Memorial Sloan Kettering Cancer Center — *New York City, NY*
  - RadiologyBERT: Built a radiology language model by unsupervised pretraining on radiology text data extracted from medical CT scan reports and fine-tuned the LMs for downstream tasks.

- **NLP Data Scientist (Intern)** May 2020 - Aug 2020
  Memorial Sloan Kettering Cancer Center *New York City, NY*
  - Developed complete NLP pipeline from scratch using public Longformer and BERT for classification on medical radiology reports, and scaled it for all metastatic disease tasks, with little training data.
- **Algorithm Engineer - Computer Vision (Intern)** Jun 2019 - Sep 2019
  KLA–Tencor Corp. *Milpitas, CA*
  - Proposed and implemented novel image quality estimation techniques for wafer images.

Publications

- **Prachi Rahurkar**, Matt Olson, Prasad Tadepalli
  Human Adversarial QA: Did the Model Understand the Paragraph?
  NeurIPS 2020 Workshop on Human And Model in the Loop Evaluation and Training Strategies
- **Prachi Rahurkar**, Lior Gazit, Huy Nguyen
  RadioBERT: Detecting Cancer Types in Radiology Reports
  (Under Submission)
- Richard K. Do, Kaelan Lupton, Pamela Causa, Anisha Luthra, Michio Taya, Karen Batch, Huy Nguyen, **Prachi Rahurkar***, Lior Gazit*, Kevin Nicholas, Christopher J. Fong, Natalie Gangai, Nikolaus Shultz, Farhana Zulkernine, Varadan Sevilimedu, Krishna Juluru, Amber Simpson, Hedvig Hricak
  Patterns of Metastatic Disease in Cancer Patients Derived from Natural Language Processing of Structured CT Radiology Reports
  (Under Review) (* responsible for NLP and deep learning work)

Awards and Honors

- 1st Prize at the State-level Project Competition **DJ ASCII** *(amongst over 909 participants)* 2018
- 2nd Prize at the Project Expo of Thadomal Shahani Engineering College *(amongst over 300 participants)* 2018
- Bronze Medal at State-level Fencing Competition held in Nagpur, MH, India 2012

Teaching

- **Teaching Assistant** at Oregon State University Fall 2020
  Software Engineering (CS 361)
- **Graduate Teaching Assistant** at Oregon State University Winter 2019 - Spring 2020
  Senior Capstone Project (CS 467)

Projects

- **Generate Melody for your Poetry** Winter 2019
  Developed a neural model using stacked LSTM networks which takes poetry text as input and generates a suitable melody for it as the output. Implemented in Python (PyTorch)
- **Translate Katakana to English** Fall 2019
  Performed translation of Japanese Katakana to English with the help of phonemes in WFSAs and WFSTs and an extension of the Viterbi algorithm. Implemented in Python.
- **Pattern Studio** Spring 2019
  Built a system that generates floral and geometric design patterns using self-attention GANs, and applies the generated pattern on the garment selected in the image of a user. Implemented in Python (PyTorch)

Skills

- **Languages:** Python, Java, R, Matlab
- **Libraries:** PyTorch, TensorFlow, Transformers
- **Databases:** SQL, MongoDB
- **Misc.:** Bash, Git, Flask, Node.js

Languages

- **English:** Native/Bilingual
- **Marathi:** Native/Bilingual
- **Hindi:** Fluent/Proficient
- **Sanskrit:** Limited
- **Spanish:** Beginner