Apurva Bhandari

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Education

- **University of Massachussets, Amherst** Aug 2019 - May 2020(Expected)
  Master's in Computer Science (Specialization in Data Science)
  Coursework: Algorithms for Data Science, Neural Networks, Natural Language Processing, Probabilistic Graphical Models, Data Visualization and Exploration, Advanced Machine Learning*, Secured Distributed Systems*
- **Birla Institute of Technology & Science, Pilani K.K. Birla Goa Campus, India** Aug 2013 - May 2018
  B.E.(Hons.) in Computer Science + M.Sc.(Hons.) Biology - Integrated course - CGPA: 8.54/10

Professional and Research Experience

- **Graduate Student Researcher, University of Massachussets, Amherst** September 2020 - Present
  - Guide: *Prof. Andrew MacCallum*
  - Title: Automated code repair using NLP
- **Software Engineering Intern, Uber Freight** May 2020 - Aug 2020
  - Owned and pushed a new feature into production which created a resultant value of $1.7M in additional annual run rate.
  - Designed the architecture complete with description of pros and cons of the alternatives considered.
  - Ramped up on Golang, Glue, Cadence, Uber's deployment system.
- **Graduate Student Researcher, Microsoft** Jan 2020 - May 2020
  - Guide: Prof. Andrew Maccallum
  - Workshop Paper accepted at the CMAI'20.
  - Compared feature attribution methods - SHAP vs Griffon for runtime anomaly detection.
- **Software Engineer, Lithium Technologies R&D, Bangalore** July 2018 - July 2019
  - Curated community question answering dataset for input to BERT.
  - Enhanced the fine-tuned BERT TensorFlow model to accept a stream of input questions and make predictions >96% faster; reducing request serving time from 9 seconds to 0.33 seconds.
- **Research Intern, ALSET lab, NUS, Singapore** Jan 2018 - May 2018
  - Successfully deployed a React, Redux & Firebase application and integrated it with Moodle.
  - Enabled collection of the student activity data on the application to perform analysis.
  - Enabled Google Colaboratory's notebook checking as a service - Created a service in Python to automate running and testing of the notebooks.
- **Software Development Intern, Amazon** July 2017 - Dec 2017
  - Successfully built and deployed a payment portal for a new payment method called PayAtStore. Code is live at storedashboard.amazon.in.
  - With a 49 times increase in the number of users in less than a year, the PayAtStore functionality was made available across 200 stores all across the nation within a year of launch.
  - Owned feature development end-to-end.

Selected Projects

1. **Improved performance of BERT on natural questions** UMass Amherst Fall - 2019
   - Created a dataset synthetically that represents questions which are more natural query like.
   - Improved performance of BERT from F1 score of 62.15 to F1 score of 73.05 on query-like question inputs by hyperparameter tuning.
   - Designed a probe task to analyse the effect of "wh-words" on QA systems.
2. **Development of Machine Learning models from scratch** UMass Amherst Fall - 2019
   - Implemented Naive Bayes, kNN, SVM, Softmax, Neural Networks, Batch Normalization, RNN & LSTM.
3. **Extract house number sequence correctly from an image using Computer Vision and Machine Learning.** May 2017
   - Obtained an accuracy of 80.4% on the task, implementing the training with Keras. Trained the final model with augmented data on an AWS g2.2x large instance.

Technical Skills

- Golang, Java, Object Oriented Programming, Cadence, Mockito, JUnit, Git, Glue
- Python, Pytorch, TensorFlow, Scikit-learn, AWS

Achievements

1st prize Hackathon at Lithium R&D India Apr 2019