Amlaan Bhoi

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Education

- **University of Illinois at Chicago** — Chicago, IL
  Master of Science in Computer Science; GPA: 3.80/4.0 — *Expected May 2019*
    - **Advisor**: Prof. Xinhua Zhang
    - **Relevant Coursework**: Advanced Machine Learning, Applied Artificial Intelligence, AI: Innovation & Entrepreneurship, Data Mining & Text Mining, Introduction to Data Science, Virtual & Augmented Reality

- **Amity University** — Noida, India
  Bachelor of Technology in Computer Science and Engineering; GPA: 8.28/10.0 — *July 2013 – May 2017*

Experience

- **CCC Information Services** — Chicago, IL
  R&D Intern (Computer Vision) — *May 2018 - Present*
    - **TagNet 1.0**: Designed and trained a low-complexity CNN architecture to classify 16 views of vehicles resulting in 25% smaller model size, 30% higher average F1-score, and 90% less training data than previous model. Model is distributed for internal use as a pre-processing step for other experiments.
    - **TvR 1.2**: Trained an ensemble of three CNN architectures on 1M+ vehicle images to classify vehicle as total loss or repairable resulting in 60% smaller model size, 25% higher average F1-score, and 50% reduction in inference time. Product is now deployed in production.

- **Reliance Communications** — Mumbai, India
  Intern — *May 2016 - July 2016*
    - **Architecture Node Maintenance**: Reduced node maintenance costs of network infrastructure by 25% by implementing A* search algorithm on vulnerable nodes.

- **OSSCube Solutions** — Noida, India
  Software Engineer Intern — *May 2015 - July 2015*
    - **Squeek iOS Twitter Application**: Developed iOS Twitter client using REST and Fabric SDK to authenticate user, parse JSON data, and create and show appropriate and customized views to user.

Projects

- **Optical Character Recognition using Conditional Random Fields (Python, C++, Numpy, Tensorflow)**:
    - Achieved 84% letter-wise accuracy with CRF implementation in $O(m|\mathcal{Y}|^2)$ complexity on UPenn OCR dataset.
    - Wrote parallel implementation of CRF using PETSc and Tao (LBFGS optimizer) to achieve 77.1% letter-wise accuracy.
- **Aspect-based Sentiment Analysis (Python, C++, Numpy, Tensorflow)**: Achieved 78.66% accuracy, 0.69 F-1 score with Deep Memory Networks (MemNet) on SemEval 2014 dataset.
- **Alethea (Python, Javascript, Keras, Tensorflow)**:
    - Achieved 81.9% sentiment analysis accuracy using LSTMs on Yelp Reviews dataset.
    - Achieved 91.3% accuracy predicting types of robberies occuring in Chicago for the Summer of 2018 based on previous crime and weather datasets.
- **Lifeguard.io (Python, Microsoft CNTK, OpenCV)**: Trained a light object detection CNTK model to detect drowning people in swimming pool videos with 56% accuracy on custom dataset.

Additional Experience & Achievements

- Presented poster on *Tiramisu DenseNet Architecture for Precise Segmentation* in Intel AI Booth at **CVPR 2018**.
- Implement and share research projects on Computer Vision as **Intel AI Student Ambassador**.
- Won Best Microsoft Hack out of 220 teams at **HackHarvard 2017**.
- Placed 16th out of 50 teams at **Google Games: Campus Edition 2017 - UIC**.
- Won Best Technical Innovation award out of 800 students at **Amity University Convocation 2017**.
- Designed and hosted programming competitions as Vice-Chair of **ACM Amity Student Chapter**.

Languages and Technologies

- Python (proficient), Java (familiar), C++ (familiar), C (familiar), SQL (familiar)
- Tensorflow, Keras, PyTorch, Scikit-Learn, OpenCV