Amlaan Bhoi

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Education

- **University of Illinois at Chicago** — Chicago, IL
  Master of Science (M.S.) in Computer Science; GPA: 3.80/4.0 — *Expected May 2019*
  - **Advisor**: Prof Xinhua Zhang
  - **Relevant Coursework**: Advanced Machine Learning, Applied Artificial Intelligence, Data Mining & Text Mining, Introduction to Data Science, Virtual & Augmented Reality
- **Amity University** — Noida, India
  Bachelor of Technology (B.Tech) in Computer Science and Engineering; GPA: 3.31/4.0 — *July 2013 – May 2017*
  - **Advisor**: Dr Sushil Kumar
  - **Relevant Coursework**: Pattern Recognition, Artificial Intelligence, Analysis & Design of Algorithms, Data Structures, Graph Theory, Operating Systems, Advanced Java Programming, Compiler Construction

Experience

- **CCC Information Services** — Chicago, IL
  R&D Intern (Computer Vision) — *May 2018 - Present*
  - **TagNet 1.0**: Designed and trained a custom convolutional network architecture for detecting 16 different views of a car with an average F1-score of 0.95 on a dataset of 60k images.
  - **TvR 1.2 (Total Loss vs Repairable)**: Trained an ensemble of InceptionResNetv2, MobileNetv2, and Xception architectures on 500k automobile images with 94.7% accuracy and average inference time of 250 ms per image.
- **Reliance Communications** — Navi 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.
  - **Internet of Things**: Created IoT case studies to reduce company infrastructure costs up to 40% as measured by finance department by developing 3 case studies with on-site device implementation design.
- **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.
  - **Objective-C Data Structure Libraries**: Created custom data modal libraries in Objective-C for future use and reduce overhead by 35%.

Projects

- **Optical Character Recognition using Conditional Random Fields (Python, Numpy, Tensorflow)**:
  - Achieved 84% letter-wise accuracy with CRF implementation in $O(m|\mathcal{Y}|^2)$ complexity.
  - Wrote parallel implementation using PETSc and Tao (LBFGS optimizer) and achieved 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, React)**:
  - Achieved 81.9% sentiment analysis accuracy using Multiplicative 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 3D-CNN object detection CNTK model to detect drowning people in swimming pool videos with 56% accuracy.
- **Otto Group Product Classification Challenge using Stacked Generalization (Python, Scikit-Learn, XGBoost, Keras)**: Used GridSearchCV to tune XGBoost parameters on Google Cloud Platform (1.27 million fits) and used 8 models in stacked generalization architecture to achieve 0.43 multi-class log loss.
- **ARYouThereYet (Swift, ARKit, Google Maps SDK)**: Created an AR application using Google Maps and Mapbox live data with dynamically generated AR location nodes and navigation view to destination.

Papers

- Majumdar, Somshubra, Amlaan Bhoi, and Ganesh Jagadeesan. "A Comprehensive Comparison between Neural Style Transfer and Universal Style Transfer." arXiv preprint arXiv:1806.00868 (2018). [PDF]
- Bhoi, Amlaan, and Sandeep Joshi. "Various Approaches to Aspect-based Sentiment Analysis." arXiv preprint arXiv:1805.01984 (2018). [PDF]

Activities & Achievements

- **CVPR 2018**: Presented a poster on *Tiramisu DenseNet Architecture for Precise Segmentation* at Intel AI Booth
- **Intel AI Student Ambassador**: Shared research on Artificial Intelligence, Machine Learning, & Deep Learning on Intel DevMesh
- **Best Microsoft Hack - HackHarvard 2017**: 1st out of 220 teams
- **Google Games: Campus Edition 2016 - UIC**: 16th out of 50 teams
- **Best in Technical Innovation - Amity University**: 1st out of 800 students
- **ACM Amity Student Chapter - Amity University**: Vice-chair (Jan 2015 - September 2017)

Technical Skills

- **Languages**: Python (proficient), Java (proficient), C++ (proficient), SQL (proficient), C (familiar), Swift (familiar)
- **Frameworks**: Tensorflow, Keras, PyTorch, Scikit-Learn, OpenCV