Eklavya Sarkar

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EDUCATION

MSc Data Science, Grade: Distinction, *University of Bath* **2018-19**
BSc Computer Science, Grade: Distinction, *University of Liverpool* **2015-18**

PROFESSIONAL EXPERIENCE

European Organization for Nuclear Research (CERN) **July-Sept 2017**
Software Engineering and Data Analysis Intern *Geneva, CH*

- Refined efficiency of production code by implementing requested features on Python scripts.
- Improved code used for testing detector in a quality control stand by adding a step-size argument feature.
- Published real-time gas levels of a mixer by writing C++ script to send data to a shared server via an API.

RESEARCH AND THESIS

***MSc* - Computer Vision: Facial Information Extraction**, *Grade: Distinction* **2019**

- Built end-to-end models to extract and process different facial information tasks from real-time images.
- Achieved 95% test accuracy on personal dataset with convolutional networks and hyper-parameter tuning.
- Optimised performance with deep learning best practices: data augmentation, batch-normalisation.

***BSc* - Computer Vision: Kohonen Self-Organizing Maps**, *Grade: 90%* **2018**

- Implemented unsupervised neural network from ground up without using any specific ML library.
- Trained back-end model on 3 open-source datasets to test neural network's efficiency and scalability.
- Developed front-end GUI for interactive data visualisation of clustering and dimensionality reduction.

***TM* - Data Science: Exoplanets, Discoveries and Prospect**, *Grade: 6/6* **2013**

- Conducted literature review on Exoplanets, with inputs from Didier Queloz, **Nobel Laureate in Physics**.
- Showed correlations between possibly habitable planets and core laws of physics by analysing datasets.
- Selected among top 2013 student projects in Geneva, and invited to publicly present at an event at CERN.

ACADEMIC PROJECTS

Natural Language Processing: Toxic Comment Classification **2018**

- Attempted to solve Kaggle competition while striving for implementations beyond *off-the-shelf* ones.
- Compared different approaches as Log Regression, Trees, LSTMs with a baseline Naive-Bayes model.

Deep Reinforcement Learning: Flappy Bird **2018**

- Trained model to learn to play Flappy Bird using a DQN, and surpassed human level performance.
- Developed optimal policy with Experience Replay and Deep Deterministic Policy Gradients.

Natural Language Processing: Open Information Relation Extraction **2018**

- Summarised large body of text by training a ML speech tag classifier using Glove word vectors.
- Optimised kitchen sink model with features such as backtracking, Vertibi algorithm, Adam optimiser.

Software Engineering Group Project: Android App **2017**

- Created dynamic full-stack food app, which analysed user data to suggest dishes based on past preferences.
- Focused on back-end by handling database, maintaining optimal data pipelines and writing SQL queries.

SKILLS

- **Programming**: Python, Java, Javascript, PHP, SQL, C++, CSS, HTML.
- **Frameworks**: TensorFlow, Keras, OpenCV, SkLearn, NumPy, Pandas, D3.js, Matplotlib, Seaborn, Flask.
- **Comfortable with**: Jupyter, Kaggle Kernels, xCode, Eclipse, Git, Unix.
- **Languages**: English, French, Hindi (fluent), German (working proficiency).

LEADERSHIP EXPERIENCE

President, Dover Court Hall Students Committee, University of Liverpool **2017-18**

- Elected President of Dover Court Hall Committee by ballot vote majority to represent 270 students.
- Led 10 member committee through generating team vision, chairing weekly meetings, gathering feedback.
- Enhanced residents' experience by taking charge of managing events throughout the year.