SUSANTA BISWAS

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EDUCATION

National Institute of Technology Durgapur August **2014 –** June **2018 (**expected**)**
Bachelor of Technology CGPA**: 8.72/10 (**till 7th Semester)
Computer Science and Engineering

Class 12th
Kendriya Vidyalaya No.1, Kanchrapara, West Bengal (**CBSE**) - **91.6%** **2014**

Class 10th
Kendriya Vidyalaya AFS, Bagdogra, West Bengal (**CBSE**) – **CGPA 10.00/10.00** **2012**

INTERNSHIP EXPERIENCE

Complex Networks Research Group (CNeRG), IIT Kharagpur **May 15, 2017 – June 30, 2017**

Project Title: ***Different Word Level Language Models for Word Prediction.***
Worked on a Natural Language Processing(NLP) project which required creating word level Language Models for doing word prediction using n-gram Probabilistic Model. Incorporated and implemented Interpolation and backoff models with Knesser Ney, Good Turing smoothing methods for better accuracy of word prediction.

RELEVANT ONLINE COURSES

Coursera deeplearning.ai Specialization:

- Sequence Models
- Convolutional Neural Networks
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
- Structuring Machine Learning Projects
- Neural Networks and Deep Learning

Coursera Stanford University

- Machine Learning

TECHNICAL SKILLS

Operating Systems:	Windows, Linux
Programming Languages:	C, C++, Python
Database Management Systems:	MySQL
Internet Technologies:	HTML(Basic), CSS (Basic)
Frameworks / Libraries / Tools **:**	Scikit-learn, Octave, Tensorflow, Keras
Miscellaneous:	Machine Learning, Deep learning, Computer Vision, NLP

SELECTED PROJECTS

Realtime Facial Recognition System: Realtime Facial Recognition system using Siamese Neural network. The model generates face encodings for identifying users. The model is based on the FaceNet model.

Language Translation using Neural Machine Translation: Sequence to sequence model for Language translation from English to French. This model uses a sequence to sequence Encoder-Decoder network with LSTM cells.

Trigger Word Assistant: A voice based assistant application which executes the assigned command on detecting the trigger word from the user voice. A trigger word is a word to which the model gets triggered once it detects it. Like for example "Hey Cortana" or "Ok Google". The Model used for detecting trigger word uses a deep Recurrent Neural Network with Gated Recurrent Units (GRU).

Express phrases using Emoji: Express English phrases with the power of Emoji. Using a deep LSTM network the model associates an English input sentence with an emoji.

Neural Date Translation: Date translation from conventional Human readable format to machine readable format(YYYY-MM-DD) using Neural Machine Translation. For this task a sequence to sequence encoder-decoder network has been used. The model incorporates Attention Mechanism for finding better context. LSTM cell units have been used in both the encoder as well as the decoder network.

Text Article Generator: Text Article generation using LSTM network. It uses a Character level Language model implementation for the sequence generation task.

Word Analogy: Finding word analogies using GLoVe word Embedding. In the word analogy task, we have "a is to b as c is to __". For example, is 'boy is to girl as king is to queen'.

Word Prediction using n-gram Probabilistic Model: Word level Language model for Word Prediction using n-gram Probabilistic Model. Different Smoothing techniques like Knesser-Ney, Interpolated Knesser-Ney, Good Turing etc. were incorporated for better probability distribution. Model based on backoff and Interpolation were also implemented.

ACHIEVEMENTS

Secured 51st rank in HackerEarth Deep Learning Challenge 2 — Dec 13, 2017 - Jan 31, 2018

OTHER MINOR PROJECTS

Code Snippet Manager: Windows Desktop application for code Snippet storage and retrieval, written in C# that can be used to store and manage code snippets. Also has an inbuilt text editor to modify and write snippets.

Live HTML Editor: Text editor for Web development. The editor can show the live web preview of the HTML code being written on the side Pane Window. The application is based on Windows Forms and .NET framework.

Computer Networks: Implemented Concurrent client server model that can perform arithmetic operations over the network.

Multitab Text Editor: Text Editor for windows Desktop with support for multiple tabs.