Soham Chatterjee

Deep Learning | IoT | Quantum Computing
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EDUCATION

NTU, SINGAPORE
M. Eng. in Electrical and Electronics Engineering
July 2019 | Singapore
CGPA: 3.5/5

SRM UNIVERSITY
B. Tech. in Electrical and Electronics Engineering
May 2018 | India
CGPA: 8.1/10

PORTFOLIOS

LinkedIn:// soham-chatterjee
Github:// soham96
Scholar: Soham Chatterjee
Website: csoham.com
Medium: @csoham358

SKILLS

PROGRAMMING LANGUAGES
- Python
- MATLAB
- C++
- Java
- Android
- Go
- JavaScript
- LaTeX

TOOLS/MODULES
- Scikit-learn
- Keras
- TensorFlow
- Pytorch
- Pandas
- NLTK
- Matplotlib
- Numpy

MICRO-CONTROLLERS
- Arduino
- Raspberry Pi

ACCELERATORS
- Neural Compute Stick
- EdgeTPU (Coral Board & Accelerator)

DIGITAL SIGNAL PROCESSORS
- Piccolo F28027

EXPERIENCE

COURSE INSTRUCTOR, UDACITY INC. | Intel AI on Edge Course
Dec 2019 to April 2020 | Mountain View, California
- Created a course on Deep Leaning Model Optimization Techniques for Edge Computing

SAAMA TECHNOLOGIES | Research Engineer
Nov 2017 to Mar 2020 | India
- Deep Learning research engineer with a special focus on Deep Learning Systems, Deployment and Hardware Optimisations.
- Used CNNs to beat the State of the Art in detecting diseases based on a person's DNA Methylation Profiles. arXiv:1807.09617
- Used Edge Computing to check product defects in manufacturing lines
- Conducted research on adapting Neural Networks for Quantum Computers

TESLA LAB, NEXT TECH LAB | Founder and Researcher
Feb 2016 to May 2018 | SRM University, Chennai
- During my tenure, Tesla Lab grew from a 3 member team to a 30+ member eco-system with people from 5 different fields of study.
- During these two years, my team worked on and completed more than **20 different projects** , participated in 10+ hackathons and competitions, **won the world's largest hackathon** , published **5+ research papers** in reputed journals including IEEE, and **open-sourced 10+ projects** , most of which were featured in both Hackster and Instructables.

RESEARCH

CONVOLUTIONAL NEURAL NETWORKS IN CLASSIFYING CANCER THROUGH DNA METHYLATION | 16TH ISCB
Dec 2018 | Aspen, USA
- The relationship between methylated versus unmethylated CpG regions and cancer types is explored using Convolutional Neural Networks (CNNs)
- The proposed CNN based Deep Learning model can classify the cancer of a new DNA methylation profile with an accuracy of 92.87%
- Presented at International Society for Computational Biology **(ISCB)** held during Dec 2018.
- arXiv preprint number - **arXiv:1807.09617** (Cited 4 times)

DETECTION OF NON-TECHNICAL LOSSES USING ADVANCED METERING INFRASTRUCTURE AND DEEP RECURRENT NEURAL NETWORKS | 17TH EEEIC
Jun 2017 | Milan, Italy
- Using LSTM networks to perform Sequence to Sequence Learning to Detect Electricity Power Theft.
- Presented at IEEE conference on Industrial and Commercial Power Systems, **EEEIC** held during June 2017
- IEEE Xplore Paper Number - **7977665** (Cited 5 times)

GALLIUM NITRIDE SEMI-CONDUCTORS | University of Cambridge
Jan 2017
- Using Machine Learning to optimize GaN circuit design by predicting optimum Gate Pulses given other circuit parameters.
- Poster presented at **WiPDA** , which is the world's biggest Power Electronic Conference.

AREAS OF EXPERTISE

Machine Learning
Deep Learning
Edge Computing
Quantum Computing

COMMUNITIES

Intel Software Innovator
IoT For All
WiMLDS Chennai

TALKS

FOSS Asia Summit 2019
PyCon MY 2018
PySangamam 2018

HACKATHONS

WINNER | Smart India Hackathon 2017
April 2017 | Ministry of Steel

•Made a Mobile App and a web server in 36 hours that can help detect Electricity Power Theft.
• A user can click a photo of a person stealing power and the Government can then verify it using Machine Learning to check if power was being stolen.
• LSTM was used to predict power theft with an accuracy of 74%.

OPEN SOURCE CONTRIBUTIONS

INDICNLP | Feb 2019

• A project to adapt NLP to Indian Languages
• Building open source tools like Speech to Text, Text to Speech, AutoComplete, Tokenizers, Generic Language Models etc. for Indian Languages.
• Currently leading this effort for Bengali and other North Indian Languages.
• Github://Bangla2Vec

ROSTER | Nov 2018

• A GPU scheduler that can dynamically schedule training tasks to GPUs.
• Roster will start the training of another neural network as soon as the training of the current one has stopped.
• You can also dynamically change the training queue by adding more important training jobs to the front of the queue.