Soumya Saha

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EDUCATION

University of Massachusetts, Amherst, Massachusetts, USA — Sep 2018 - May 2020

Master of Science in Computer Science

Selected Courses: Intro to Natural Language Processing, Neural Networks: A Modern Introduction, Adv. Machine Learning

Indian Institute of Technology, Kharagpur, West Bengal, India — Jul 2012 - May 2016

Bachelor of Technology (Hons.) in Electronics and Electrical Communication Engineering **GPA: 8.23/10.0**

Selected Courses: Machine Intelligence & Expert Systems, Operating Systems, Design and Analysis of Algorithms, Data Structure & Object Representation, Operations Research, Probability & Stochastic Processes

SOFTWARE SKILLS

- Programming Languages: C++, Python, C
- Libraries: NumPy, Pandas, XGBoost, LightGBM, Scikit-learn, Matplotlib, Seaborn, NLTK, Pytorch, Tensorflow

PROFESSIONAL EXPERIENCE

Engineer, Samsung R&D Institute Delhi, India — Jul 2016 - Jul 2018

- Contributed in the maintenance of **GStreamer** based Player in **Netflix** application in Samsung Tizen UHD TV models.
- As a C++ developer, developed a **Native Client** based IPTV Reference App for playback of Live and VOD Channels in Samsung Smart TV running on Tizen OS.
- Successfully integrated RTP, RTSP, HLS Streaming Protocols and **Sample AES DRM** in the above solution.
- Worked extensively with **ARM TrustZone**, FFmpeg Demuxer, MPEG Transport Streams, Linux Socket Programming.
- Gained broad insight into the overall architecture of Smart TV middleware pertaining to media transfer over IP network.

Summer Intern, National Remote Sensing Centre, Hyderabad, India — May 2015 - Jul 2015

- Implemented and tested Frequency Reader, Pseudo Random Binary Sequence Generator, and Bit Error Rate Detector by writing VHDL codes in Quartus II, embedding code in Altera MAX EPM7160SLC84-7 EPLD with the help of Master Programming Unit (MPU) and finally making required circuits in Wire-wrap Board.
- Compared running time of matrix multiplication program in C and CUDA with CUDA-enabled Nvidia Graphics Processing Unit (GPU) for general purpose parallel programming.

ACADEMIC PROJECTS

Imposter Detection and Analyzing the effect of the Mood of a Person on Keystroke Dynamics — Sep 2015 - Oct 2015

- Using JAFFE Database for training achieved 86% accuracy in determining mood of the captured test images in Python.
- Analyzed impact of the mood of a person on keystroke dynamics using One Class Support Vector Machine (**SVM**) and Artificial Neural Network (**ANN**) as the classifiers for keystrokes and facial expressions respectively.
- Successfully captured hold time and latency data for keystrokes and achieved 78% accuracy on detection of Imposter.

Interactive Construction of 3D Models from Panoramic Mosaics — May 2014 - Jul 2014

- Created a system that takes panoramas taken from the same viewpoint as inputs.
- The system recovers the camera pose for each mosaic from known transformation matrices, line directions, and positions and then constructs a 3D model using all available geometrical constraints.

B.Tech. Project on the Impact of H.264 & H.265 Codecs on the Video Quality for 4K resolution — Jan 2016 - Apr 2016

- Compared the impact of H.264/AVC and H.265/HEVC Compression Standards on the Video Quality for 4K resolution.
- Measured the PSNR, SSIM, VIFP metrics between two different sequences of the above two compression standards for different bitrates and then compared those metrics in various graphs.

ACADEMIC DISTINCTIONS

- Recipient of prestigious National Talent Search Examination (2008) Scholarship in India.
- Qualified Regional Mathematics Olympiad (2010) and appeared for Indian National Mathematics Olympiad (2011)