ASHIN GEORGE

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EDUCATION

University of California San Diego — **Overall GPA: 3.96/4**
MS in Computer Science — Sep 2017 - Present

Birla Institute of Technology and Science - Pilani — **Overall GPA: 9.12/10**
B.E.(Hons.), Electrical and Electronics Engineering — 2009 - 2013

TECHNICAL SKILLS

Languages	Python, Java, Perl, C/C++, MATLAB, SQL, shell, ARM/MIPS
Libraries	TensorFlow, Keras, PyTorch, OpenCV, NLTK, Scikit Learn, Pandas, Numpy
Applications	Spark, CUDA, MPI, Vi/Vim, git, JIRA

EXPERIENCE

Oracle Labs — San Diego
Machine Learning Research Intern — *Jun 2018 - Present*

- Machine Learning Techniques for prognostic/predictive analytics from time series signals
- Automated Spillover Characterization Mitigation for Robust Machine Learning Prognostics.
- Robust Remaining Useful Life (RUL) estimate of assets from time series signals using adaptive SPRT
- Dequantization of quantized signals by spectral reconstruction method and level frequency method
- Creating a synthetic signal database with artifacts such as missing values, quantization, variable sampling, phase asynchronies, correlation clusters, non-linear variable SNR, stuck-at faults for challenges

ARM — Bangalore, India
Senior Engineer — *Apr 2017 - Aug 2017*
Engineer — *Jan 2015 - Mar 2017*
Graduate Engineer — *Jul 2013 - Dec 2014*
Intern — *Jan 2013 - Jun 2013*

- Functional verification of ARM architecture CPUs using Random Instruction Sequence(RIS)
- Profiled and overhauled the internal multi-core RIS tool, designing algorithms to implement ISA features and developing the internal software model for simulating tests, leading to licensing by external partners
- Presented paper on Self-modifying Code at ARM Global Engineering Conference, Birmingham, U.K.
- Automation of top-level Microprocessor Validation Flow using Perl
- Mentored a new graduate recruit, enabling her to achieve employee recognition award within six months, and two interns, leading both to be employed at ARM after internship

University of California, San Diego
Graduate Teaching Assistant Web Mining & Recommender Systems — *Sep 2018 - Present*
Graduate Teaching Assistant Computer Engineering — *Apr 2018 - Jun 2018*

Madras Atomic Power Station, Kalpakkam — India
Summer Research Intern — *May 2011 - Jul 2011*

COURSEWORK

- Neural Networks for Pattern Recognition
- Image Recognition
- Machine Learning: Learning Algorithms
- Web Mining and Recommender Systems
- Data Mining and Analytics
- Principles of Artificial Intelligence: Probabilistic Reasoning and Decision-Making
- Parallel Computation
- Principles in Computer Architecture

PROJECTS

Personalized Recommender System based on Google Local {Python: Pandas, Numpy}

· Created a Recommender system, optimized for sparse data, to suggest stores to users
· Suggests user-specific business visit using Collaborative Filtering models with 88.41% accuracy
· Predicts personalized business rating using Latent Factor model with an RMSE of 0.74549

Fake News Classification {Python: Sklearn, Numpy, BS4}

· Created a News classifier using web assisted MLP with 86% accuracy and 0.13 BER
· Compiled a news corpus, *Beautiful Liar*, of 435,000 labeled articles from sources like Politifact.com

Multi-Agent Deep Reinforcement Learning {Python: Keras, OpenAI Gym, Pygame}

· Trained reinforcement learning agents to play Pong and N×N Tic-Tac-Toe
· Developed Tic-Tac-Toe and Pong game engines for multi-agent collaborative/competitive tasks

Depth Estimation from RGB: Unsupervised & Supervised {Python: OpenCV, Tensorflow}

· Unsupervised monocular depth estimation by inferring disparity maps from single images
· Supervised depth estimation using a Fully Convolutional RNN model trained on indoor images
· Depth estimation for indoor(NYU) and outdoor(KITTI) images using both models

Weather Analysis, Inference and Visualization {Python: Spark, SQL, Leaflet}

· Visualization and interactive maps of NOAA weather dataset hosted as parquet files in AWS S3
· Data analysis and spectral decomposition to infer/clean spatial and temporal trends

Finding Stack Overflow Duplicate Questions {Python: NLTK, StarSpace, Gensim}

· Identify duplicate questions by sentence similarity using Google Word2Vec embeddings
· Trained Facebook StarSpace word embedding to find duplicate questions

Scalable High Speed Aliev-Panfilov Cardiac Simulation {C++: OpenMPI}

· Implemented Aliev-Panfilov model for simulating electrical signal propagation through cardiac tissue
· Optimized the model for multi-core systems ranging from 8 to 960 cores with (3.9 TFlops on 960 cores)

OTHER PROJECTS

- Stock Analysis and Category Prediction using XGBoost {Python: Spark, MLlib}
- Identifying Political Preference from Big Data Analysis of Twitter Feed {Python: Spark}
- Removing Gender Bias from GloVe Word Embeddings {Python}
- Emojification of Sentences using GloVe embeddings {Python: Keras}
- Attention Networks for Neural Machine Translation {Python: Keras, Faker}
- Speech Recognition using Deep Recurrent Neural Networks {Python: Keras}
- Music Generation using LSTM & GRU Recurrent Neural Networks {Python: Pytorch}
- Caltech-256 Image Classification by Transfer Learning {Python: Pytorch, Keras}
- Image classification using Spatial Pyramid Matching {Python: OpenCV}
- Visualizing Deep Belief Networks latent space using t-SNE {MATLAB, Python: Scikit-Learn}
- Study of Canny, Sobel and Structured Forest Edge Detectors {Python: OpenCV}
- Prototype selection using modified LVQ algorithm {Python}
- High Performance Matrix Multiplication on CPUs and GPUs {C, C++: CUDA}