Amit Panghal

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Education

- **New York University** — New York City, NY
  Master of Science in Computer Science; GPA: 3.57 — *Aug. 2017 – May. 2019*
- **Indian Institute of Technology Bombay** — Mumbai, India
  Bachelor of Technology in Computer Science and Engineering with Honours — *July. 2010 – May. 2014*

Work Experience

- **Samsung Research India** — Bangalore, India
  Senior Software Engineer — *Jul 2014 - Jul 2017*
  - **Transmission Time Predictor**: Smart service for predicting upload/download times of media files using Machine Learning. Lead research and development of prototype solution including data collection, feature selection, modelling and deployment. Won 2nd Place at Samsung wide C-LAB competition. Patent pending.
  - **Power Management**: Service to monitor, synchronize background activity of infrequently used applications in Android. Developed android application/widget for demo and testing. Solution was commercialized in Samsung mobile devices.
  - **Data Traffic Management**: Made android framework layer changes to piggyback foreground data traffic with asynchronous background transmissions to optimize total radio active time.
  - **Data Analytics**: Carried out controlled experiments to collect per-component power data in Smartphones. Modelled data in R using quadratic programming and obtained new power-coefficients for all cpu frequencies which resulted in better cpu power estimation on 8 core Samsung Exynos CPU.
    Built application to collect network data in wild while uploading/downloading media files on Android. Modeled Network data using Support Vector Regression to achieve 80% time-to-transmit prediction accuracy.
  - **Research**: Presented research on Transmission Time Estimation at IEEE WCNC.
  - **SmartSwitch**: Service for smooth handover between WiFi and LTE. Worked on experiment set up using Raspberry Pi to gather data to analyze predictability of WiFi network health using physical layer parameters.
- **Rise AB** — Kista, Sweden
  Student Reseacher — *Summer 2013*
  - **Data Transfer Protocol**: Prototyped, developed and deployed a data transfer protocol for low power sensor nodes using C on Contiki OS. Decentralized protocol uses finite state machines. Nodes take on master/slave roles in turns and transfer/forward data. Sensor nodes with solution were deployed on Large structures to collect and transfer vibration data for structural health monitoring.

Projects

- **Books2Rec**: Open source Hybrid recommender system using content features from metadata and latent features from preference matrix to recommend books to goodreads.com users.
- **Road Traffic Forecasting**: Time Series Forecasting of average speeds of NYC MTA buses. Used Box-jenkins methodology for model selection. Preprocessing, Modelling and Validation on large scale distributed system (Spark).
- **Multi Factor Authentication System**: Developed android application, authentication backend using django and webapp for testing. Used sms powered channel using twilio apis for challenge response based authentication protocol.
- **Data Center Management**: Developed a simulator in c++ to benchmark Virtual Machine migration algorithms. Optimal algorithm uses Markov Decsion Process with input as workload patterns, SLA violation costs, power cost etc. and returns optimal policy to maximize data center profits.

Programming Skills

- **Languages**: : C++, SQL, Java, Python, Scala, R, Lisp, ML, Javascript, Solidity
- **Technologies**: : AWS, Hadoop, Spark, RapidMiner, Tensorflow, Twilio, D4LJ, NLTK