

JISHNU DEY

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EDUCATION

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

MS IN COMPUTER SCIENCE

Expected: May 2020 | Urbana-Champaign, IL

GPA: 4.00

Coursework: Deep Learning • Distributed Systems • Advanced Information Retrieval • Database Systems

Teaching Assistant: CS 125 — Java and Android Programming laboratory and discussion sessions

Research Areas: Deep Learning • Natural Language Processing • Distributed Systems

- Implemented a neural image caption generator involving encoder fine-tuning and scheduled sampling of decoder, and performed analysis on beam search. Hosted web demo using Flask.
- Implemented a neural machine translation model involving cross view representation in the encoder and multi-head attention and scheduled sampling in the decoder.
- Implemented a cryptocurrency system based on the Nakamoto Consensus protocol, achieving a transaction solving rate of 20 tx/s stably multi-casted to 100 nodes.

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

B.TECH IN ELECTRONICS AND ELECTRICAL COMMUNICATION ENGINEERING

May 2016 | Kharagpur, India

GPA: 9.36 / 10.00

Coursework: Machine Learning • Operating Systems • Algorithms • Programming and Data Structures • Digital Signal Processing • Image Processing • Convex Optimization • Probability and Statistics

Thesis: Distributed Deployment of Wireless Sensor Networks

- Maximization of coverage among P2P nodes using a non-cooperative game theoretic approach. Mapped greedy local objectives to a global potential function and optimized using distributed gradient descent; achieved optimal coverage for 1D and 2D sensor networks.

EXPERIENCE

GOOGLE LLC

SOFTWARE ENGINEERING INTERN (MAPS DISCOVERY TEAM)

May 2019 - Aug 2019 | Mountain View, CA

- Development of a feature selection pipeline to improve the quality of UGC filtered photos in Things-To-Do cards
 - Developed training pipelines for chained models in Ranklab (random forests) and TensorFlow (neural networks).
 - Identified 540 important entities and signals from a feature space of 13000+ signals; achieved a precision of 92% while predicting interesting photos; also improved coverage to 15% from existing 10% across all UGC photos while improving quality.
 - Used GoogleSQL to construct datasets; wrote Flume pipelines to perform large scale data preprocessing and model inference, which was integrated into the Geo Discovery Stream production pipeline.

SAMSUNG RESEARCH

SOFTWARE ENGINEER (ADVANCED TECHNOLOGIES LAB)

Jun 2016 - Jul 2018 | Bangalore, India

- InstaBP - Android App for Blood Pressure Measurement
 - Feature mining and neural network modeling using TensorFlow; predicted blood pressure with an accuracy of 6 mmHg; first author publication in IEEE EMBC 2018.
 - Developed and launched the Android App on Google Play Store, available in India region (10K+ downloads).
- Sleep-Awake Classifier — Multimodal sensor data processing and sleep detection using cost optimized soft margin SVMs
- Food-type Classifier — Transfer learning of pretrained ResNet models on Samsung's in-house dataset of Indian foods

SKILLS

General Purpose Programming: C++ • Python • Java • MATLAB

Machine Learning: PyTorch • TensorFlow • Keras • scikit-learn • NLTK • Pandas • R

Databases and Distributed: SQL • Spark • Hadoop • MongoDB • Neo4j

Miscellaneous: Git • \LaTeX • Django • Flask • HTML5 • CSS • Android • jQuery

PUBLICATIONS

- [1] J. Dey, A. Gaurav, and V. N. Tiwari. InstaBP: Cuff Less Blood Pressure Monitoring on Smartphone Using Single PPG Sensor. In *2018 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, 2018.
- [2] J. Dey, T. Bhowmik, S. Sahoo, and V. N. Tiwari. Wearable PPG Sensor based Alertness Scoring System. In *2017 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, 2017.

ACHIEVEMENTS

- NASSCOM AI Game Changer Award awarded to InstaBP
- Samsung Citizen Award for Technology Excellence in Innovator Category
- All India Rank 534 (top 0.09% among 0.6 million candidates) in IIT-JEE

Team Award | 2018
Individual Award | 2017
Individual | 2012