JISHNU **DEY**

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EDUCATION

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

MS in Computer Science — *Aug 2018 - 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

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

B.Tech in Electronics and Electrical Communication Engineering — *Jul 2012 - 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

EXPERIENCE

GOOGLE LLC

Software Engineering Intern — *May 2019 - Aug 2019 | Mountain View, CA*

- Developed large scale preprocessing, training and inference pipelines to predict interesting activity images among User Generated Content of Google Maps.
- Identified 540 important entities from a space of 13000+ signals; achieved a precision of 92%; improved coverage to 15% from 10%.
- ***Technologies:*** C++, Python, RankLab, TensorFlow, GoogleSQL, Flume (MapReduce).

SAMSUNG RESEARCH

Software Engineer — *Jun 2016 - Jul 2018 | Bangalore, India*

- InstaBP — Launched InstaBP, an Android App for Blood Pressure measurement (10K+ downloads); based on neural networks trained on blood volume signals; accuracy of 6mm Hg; first author publication in IEEE EMBC 2018.
- Food Classification — Created framework for food type detection using transfer learning of ResNet models on 100K Indian food images; achieved 88% mean precision and 86% mean recall.
- Sleep Detection — Developed an algorithm for sleep detection from Samsung Gear motion sensors using soft margin SVMs.
- ***Technologies:*** C++, Python, TensorFlow, scikit-learn, Java, SQL, Android, Git, MATLAB, R, LaTeX.

PROJECTS

- Image Caption Generator — Implemented a neural image caption generator using Img2Seq models and performed analysis on beam search; hosted web demo. ***Technologies:*** Python, PyTorch, Git, Flask, Google Cloud, jQuery, HTML5.
- Neural Machine Translator — Developed a machine translator using Seq2Seq models, semi supervised learning and multi-headed attention. ***Technologies:*** Python, PyTorch, Git, Shell, NLTK.
- Cryptocurrency — Created a cryptocurrency based on the Nakamoto consensus protocol; processed transactions at 20 tx/s for 100 nodes. ***Technologies:*** Python, Asyncio, Shell.
- Symptom Checker — Developed a Django server for users to enter condition in natural language; used knowledge graph and Bayesian inference to predict potential diseases. ***Technologies:*** Python, SQL, AWS RDS, Django, HTML5, NLTK.
- Distributed Sensor Networks — Maximization of coverage among P2P nodes using a non-cooperative game theoretic approach using distributed gradient descent. ***Technologies:*** Python, Threading.

SKILLS

C++ • Python • Java • MATLAB • PyTorch • TensorFlow • Keras • scikit-learn • NLTK • Pandas • R • SQL • Spark • Hadoop • MongoDB • Neo4j • AWS • GCP • Git • Shell • 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. — *Team Award | 2018*
- Samsung Citizen Award for Technology Excellence in Innovator Category. — *Individual Award | 2017*
- Gold Medalist in University Math Olympiad at IIT Kharagpur. — *Team | 2013*
- All India Rank 534 (top 0.09% among 0.6 million candidates) in IIT-JEE. — *Individual | 2012*