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Biswajit Paul

Primary Interests

Machine Learning: Computer Vision, Reinforcement Learning

Skills

- **Programming**
  - Python, Java, C
  - Batch script, Shell script
  - HTML, CSS, JavaScript
  - PL/SQL
- **Machine Learning**
  - Frameworks: Keras, TensorFlow, MATLAB
  - Libraries: NumPy, Pandas
- **Tools**
  - Jupyter Notebook, Google Cloud Platform (GCP)
  - Github, VS Code/PyCharm/Netbeans

Experience

- **ICARD - North Bengal University** India
  Internship *Jan 2021 - Feb 2022*
  - Worked on **data analysis** of X-ray pulsars to gain insight into their temporal and spectral properties using HEASoft and CALDB system.
  - Contributed in 2 papers performing **data analysis** on Be/X-ray pulsars (2S 1553-542/Swift J1626.6-5156) to study their timing/spectral properties during the 2021 outburst.
- **Tata Consultancy Services** India
  Developer *Sep 2016 - Dec 2020*
  - Built data pipelines using **Python** to load data from multiple ERP systems to Hyperion modules (Planning/HFM) for budgeting/forecasting.
  - Developed and supported multiple interfaces using **JCAPS**, a **Java** based integration framework, to facilitate data load and manipulation between ERP systems and budgeting/forecasting applications.
  - Developed **SQL scripts**, **PL/SQL triggers** / **stored procedures** / **functions** – for Python based data pipelines and JCAPS interfaces.
  - Worked with **HTML** and **JavaScript** to support front-end for JCAPS interfaces.
  - Worked with different financial modules of **Hyperion**: Planning, Essbase, FDMEE, HFM and MS Smart View.
  - Implemented **Automation** processes using **batch/shell scripts** to improve clients' financial systems and remove round-the-clock human support. Automated numerous recurring processes, e.g., data load, calc script execution for budgeting/forecasting, generating and sending financial reports directly to clients, taking backups for disaster recovery, server/service restart etc.
  - **Others**:
    - Consulted with clients to understand business requirements and provide design/technology solutions.
    - Led development/enhancement projects related to Python based data pipelines and JCAPS interfaces.
    - Hosted multiple learning sessions on Python.

Papers

- Binay Rai, **Biswajit Paul**, B.C. Paul. *Pulse-phase & timing-resolved spectral analysis of the Be/X-ray pulsar 2S 1553-542.* Manuscript submitted to Journal of Astrophysics and Astronomy (JOAA), 2022. [under review]
- Binay Rai, **Biswajit Paul**, Md. Tobrej, Manoj Ghising, Ruchi Tamang, B. C. Paul. *NICER view of Swift J1626.6-5156.* Manuscript submitted to Monthly Notice Royal Astronomical Society (MNRAS), 2022. [under review]

Projects

- Classify radio signals from space using Keras [link]
- Building Convolutional Neural Network from scratch and MNIST classification [link]
- Building simple Neural Network from scratch [link]

Additional courses

- **Machine Learning**: (Coursera/Stanford; Instructor: Andrew Ng) [link]
  Topics: Linear regression, Logistic regression, Neural networks, SVM, PCA etc.
- **Deep Learning Specialization**: (Coursera/Deeplearning.ai; Instructor: Andrew Ng) [link]
  1. Neural Networks and Deep learning
  2. Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
  3. Structuring Machine Learning Projects
  4. Convolutional Neural Networks (CNNs)
  5. Sequence Models (NLP)
- **TensorFlow in Practice**: (Coursera/Deeplearning.ai; Instructor: Laurence Moroney, Google Research) [link]
  1. Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning
  2. Convolutional Neural Networks in TensorFlow
  3. Natural Language Processing in TensorFlow
  4. Sequences, Time Series and Prediction
- **Data Engineering, Big Data, and Machine Learning on GCP Specialization**: (Coursera/Google) [link]
- **Core Java**: (HP)

Achievements

- TCS On-the-spot awards for project work, Client appreciation.
- Participated and presented in IETE conference, Host: Techno India, Saltlake.
  Topic: *Wearable Medical Electronics*
- Winner of the Presentation Competition in Nanotechnology conference, Host: Techno India, Saltlake.
  Topic: *Future of Graphene in Nanotechnology*

Education

- **Techno India, Saltlake (West Bengal University of Technology)** — India
  B.Tech in Electronics and Communications Engineering; GPA: 8.21 — *2016*
- **Siliguri Boys' High School (WBCHSE)** — India
  10+2: Science (Elective: Computer Science); Aggregate: 81.80% — *2012*
- **Siliguri Boys' High School (WBBSE)** — India
  10: (Elective: Additional Mathematics); Aggregate: 86.75% — *2010*