Akash Mondal

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EDUCATION

- **Indian Institute of Technology, Kharagpur**   Kharagpur, WB
  B.Tech + M.Tech Integrated Dual Degree 5Y (Civil Engineering)   *July 2016 – June 2021*

EXPERIENCE

- **Data Scientist | American Express | Bengaluru, IN**   **Aug'21 - Present**
    Gen6 Point-of-Sale Authorization Models | Awarded Analyst of Quarter for excellent project performance
    - Designed, Developed, and monitoring end-to-end POS authorization models with transaction volume exceeding \$1B/Month, projected to generate additional revenue of **\$8.6M** per quarter compared to previous versions, with a GINI score of **92%**.
    - Devised methodologies to predict both short and long-term risks using a single model, consideration of macroeconomic shifts in the model's framework, tool to check data quality, and simplify the hyperparameter tuning method.

    Automated Model Health Tracker
    - Implemented an Automated tracking tool to check our risk model's health in various risk segments. Engineered the whole pipeline using **PySpark and SQL**, processing terabytes of Data, and preventing credit losses of more than \$0.8M/month.

    RLA Model for Negative Actioning
    - Uplifted the RLA model for proactive credit line decrease to generate simplified MRC to improve communication verbiage, resulting in enhanced customer experience and improved default capture rate with a lift of 7% in the high-risk CM segments.
- **Research Engineer Intern | American Express — Paper**   **May'20 - Jul'20**
    - Worked with the Decision Science Team to create **probabilistic models** for predictive uncertainty estimation
    - Used MC Dropout, Deep Ensemble and introduced two novel gradient boosting-based models to quantify uncertainty
    - Received a **full-time return offer** for showcasing excellence in performance and project results
- **Student Developer | American Express — Paper**   **Sep'19 - Nov'19**
    - Created a domain-specific factoid **question answering system**, trainable in multiple domains with real-time answering, consisting of Question Processing, Document Ranking, and **BERT** based Answer Extraction process.
    - Received Internship offer for showcasing excellence in performance and results. Advisor: Saradindu Kar
- **Intern | National AI Resource Portal | CAI IIT Kharagpur**   **May'19 - Jul'19**
    - Developed a conversational chatbot using the *Rasa* framework for Search and Browse of the AI Resources
    - Implemented a screen scraper, to extract and organize data from various publicly available machine learning repositories
- **Machine Learning Engineer Intern | CodeFire Technologies**   **May'18 - Jul'18**
    - Created an information retrieval based question answering system for answering queries related to school admission
    - Developed an ETL tool to extract less structured web content from that appear only once to create a consolidated base

PROJECTS & COMPETITION

- **Localization of the Predominant Object in an Image**   Apr'19
    - Ranked among the top 5% in Flipkart GRID machine learning challenge-2019 with more than 7000 registered individuals with a mean IOU of 89% in bounding boxes prediction to Locate the Predominant Object in the given Image
- **Classification of Argumentative Elements in Student Writing**   Jun'22
    - Developed a predictive model to predict the effectiveness of discourse elements in the student-written argumentative essays using the **RoBerta**-base Model. LL Score:0.649(top 30% in the leaderboard), Link: Akash2
- **Pavement Performance Prediction**   Oct'20
    - Used machine learning approaches to develop pavement performance prediction(PPP) models in pavement management systems to predict the functional and structural conditions of the pavement, guided by Prof. K. S. Reddy, IIT Kharagpur.
- **Expanse & Income Tracker — Link**   Apr'18
    - Developed an expanse and income tracker web app with user-authentication features to track personal expenses and income as a part of the Microsoft CodeFunDo event. Implemented the backend using PHP and the database schema using MySQL.

SKILLS

- **General**: Machine Learning, Deep Learning, Natural Language Processing, Big Data Analytics
- **Modelling**: XGBoost/Gradient Boosting, Regression, CNN, RNN, LSTM, Transformer/BERT, Bayesian NN
- **Languages**: Python, C++, C, Apache Spark/PySpark, SQL, SAS, shell scripting, HTML, CSS, MATLAB
- **Tools/Others**: Linux, Windows, LaTeX, Git, TensorFlow, Keras, scikit-learn, Apache Hive, Hadoop, AWS, S3, Pandas, Numpy

RELEVANT COURSES & CERTIFICATION

Programming & Data Structures, Algorithm-I, Machine Learning, Probability Statistics, Databases, Deep Learning Foundation, Natural Language Processing, Partial Differential Equations, Amazon Web Services ML Essential

ACHIEVEMENT/COMPETITION/POR

- **Publicis Sapient Jumpstart 2019**: One of the top scorers and was invited for the offline event with the core team
- **Microsoft code.fun.do Campus Hackathon 2018**: Among top 5 teams out of above 30 teams in the event
- **ACM-ICPC Asia Kolkata-Kanpur Onsite Replay Contest 2017**: Global Rank-12 and 9th in India in the Programming Competition at www.codechef.com. Team name: kgp16ce. Competition/Result Link: $rank_link$