TEJIT PABARI

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EDUCATION

Stanford University | Graduate Courses September - December 2022
Courses: Data Mining and Analysis

Columbia University | B.S. in Computer Science (Artificial Intelligence track) August 2017 - May 2021
Courses: Multi-variable Calculus, Probability, Statistics, Discrete Math, Linear Algebra, Artificial Intelligence, Machine Learning, Natural Language Processing, Computer Vision, Applied Deep Learning, Databases, Advanced Databases

Programming Skills: C#, .NET, Azure DevOps, QGIS, Python, React, Javascript, PostgreSQL

WORK EXPERIENCE

Software Engineer | Microsoft, Redmond June 2021 - Present
Azure Maps Creator specializes in developing interactive and dynamic indoor maps

- Developed an Azure-based performance testing framework, automated via Azure Pipelines, with results visualized through PowerBI. Supplied detailed documentation for developers to diagnose latency regressions and pinpoint root causes.
- Shadow Project Manager, drove product development for Azure Maps Creator Onboarding tool including iterative design with user feedback and accessible documentation. Also worked on metrics collection for Creator APIs, to drive feature-development.
- Spearheaded creation of Azure Maps Creator QGIS plugin, introducing support for the latest APIs and enhancing data loading via parallelization. Transformed the user interface with revamped UI, added feedback support, provided comprehensive documentation, and integrated logging and debugging features. Improved the developer experience through thorough code refactoring, detailed developer guides, and extensive bug bashes. The plugin has been downloaded over 1000 times.
- Participated in the modification of the dataset service to facilitate indoor map creation from Geojson files. Implemented automated testing support, coordinated bug bash, and oversaw documentation release for the new API version.
- Contributed to hackathons, developing new features like Visio integration and enhancing user performance with profilers.
- Directed diversity initiatives, organized health-focused challenges, facilitated team bonding through social activities and social work.

Machine Learning Intern | Jio - Reliance Industries, India June 2019 - August 2019
Reliance Industries, Mumbai is a leading petrochemical, energy and telecommunication industry in India

- Engineered a campus security software for license plate recognition using CV and Tensorflow.
- Optimized a Bert Model for processing and querying legal documents.

Full Stack Developer | SMARTest, Columbia University March 2018 - January 2019
User friendly Iphone and Android app for affordable HIV and Syphilis detection with result sharing.

- Utilized React Native with Firebase to develop front-end for the SMARTest App. Integrated Twilio and SendGrid for data sharing. Hosted app using Expo, with automated testing and deployment pipelines. Published research in Springer, AIDS and Behaviour

RESEARCH EXPERIENCE

Natural Language Processing Researcher | Earth Institute, Columbia University May 2020 - June 2021
Flood Event Extraction from News Media to Support Satellite-Based Flood Index Insurance in Bangladesh

- Extracted 50,000 news articles from Bangladeshi newspapers and trained a BERT classifier to identify flood-related articles.
- Created a time-series for flood events, established criteria for flood occurrence and severity based on the frequency and intensity of flood-articles over time. Validated results against Sentinel, EM-DAT, and Twitter data.
- Presented findings at the AGU conference and authored a pre-print research paper. Assisted the Bangladesh government in developing a flood index insurance based on the results.

Computer Vision Researcher | DMVV Lab, Columbia University May 2020 - August 2020
Researched phrase grounding pipeline for image and caption extraction from research papers

- Leveraged YOLOv3 and BERT to extract and segment diagrams and caption labels from research papers, contributing to the construction of a queryable knowledge graph.
- Developed models for curve extraction from diagrams. Classified Dosage Response curves using image and text features.

Data Science Researcher | INCITE Labs, Columbia University October 2019 - May 2020
Measuring liberal arts education using syllabi and mission statements of universities

- Implemented NLP models for syllabi data extraction and developed Python scripts for streamlined SQL database interaction.

Machine Learning Researcher | Columbia University February 2019 - May 2019
Recognizing pills from pictures and extracting prescription data from pill bottles

- Utilized Google Vision and OCR to extract pill features and bottle imprints. Developed a multi-dimensional embedding using collected data for RandomForest and SVM classifiers, enabling precise pill identification. Published project report

Researcher | The Doon School January 2016 - May 2017
Studied Solar Illumination Provided by a Water Bottle kept in the sun, to prove the validity of the Liter of Light project

- Conducted experimental research demonstrating that the "Litre of Light" bottle provides superior illumination compared to a glass plate in low-light environments, such as slums.
- Regional Finalist for Google Science Fair. Published and presented research at Journal of Basic and Applied Engineering Research.
- Received media coverage for my research, with features in The Tribune, The Times of India and Krishi Jagran national newspapers.

LEADERSHIP

Co-Founder and CTO | Columbia Virtual Campus, Columbia University May 2020 - May 2021
Pandemic-born virtual community platform supporting Columbia students with resources, events, and initiatives.

- Led the product development cycle from ideation to execution, including user research, design and tech stack development. Achieved 10,000+ views since inception with an active userbase of 1000+ students fostering interaction and contribution amidst the crisis.
- Designed the tech stack using Gatsby, Node.js, Javascript, Firebase, Google servers, and Netlify. Integrated various tools to facilitate mailing systems, tutor hosting and event planning platforms. Mentored engineers and led a team of 30 students across 5 projects.
- Organized various community support projects such as a Coding Mentor Program, Alumni Meetups, Freshmen Social, and a Black Lives Matter give initiative, raising $1100.

Lead Organizer | Virtual Campus Design Challenge, Columbia University March 2020 - April 2020
A 3-day hackathon addressing the challenges of virtual community development and remote learning amidst COVID-19 pandemic.

- Conceptualized and executed a three-day hackathon for Columbia students, offered technical mentorship to participants, orchestrated a speaker series featuring distinguished researchers, facilitated mentoring sessions and coordinated the judging process.
- Over 30 teams participated, with 4 winners in different categories awarded $500. The winning entries were widely used by the Columbia students to foster community interaction, medical support and improve online learning during the COVID crisis.

Curriculum Developer | INSPIRIT AI Program June 2019 - August 2019
Artificial Intelligence Program for High School Students taught by Stanford and MIT graduate alumni

- Developed introductory project curriculum on Sentiment Analysis of Anti/Pro refugee tweets.

PUBLICATIONS

1. Tellman, Beth, **Tejit Pabari**, Mitchell Thomas, E. WU, Upmanu Lall, Marco Tedesco, Michael S. Steckler, Paolo Colosio, Daniel E. Osgood, and Melody Braun. "Flood Index Insurance Trigger Development with Radar Satellites and News Media in Northern Bangladesh." In AGU Fall Meeting Abstracts, vol. 2020, pp. NH035-03. 2020. AGU Abstract

2. Iván C. Balán, Javier Lopez-Rios, Samiksha Nayak, Cody Lentz, Siddarth Arumugam, Bryan Kutner, Curtis Dolezal, Ongun Uzay Macar, **Tejit Pabari**, Alexander Wang Ying, Michael Okrah and Samuel K. Sia. "SMARTtest: A Smartphone App to Facilitate HIV and Syphilis Self- and Partner-Testing, Interpretation of Results, and Linkage to Care." In AIDS Behavior 24, 1560–1573 (2020). https://doi.org/10.1007/s10461-019-02718-y

3. **Tejit Pabari**. "A Study on the Solar Illumination Provided by a Water Bottle" In Journal of Basic and Applied Engineering Research (JBAER). https://doi.org/10.13140/RG.2.1.3548.3121