






PARAM BIYANI

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EDUCATION

BITS Pilani - K.K. Birla Goa Campus

B.E. in Computer Science, Minor in Data Science

August 2019 - July 2023

CGPA: 8.96/10

PAPERS AND PUBLICATIONS

1. 🏆 **Best Paper Presentation** **Param Biyani***, Yasharth Bajpai*, Arjun Radhakrishna, Gustavo Soares, Sumit Gulwani – **RUBICON: Rubric-Based Evaluation of Domain-Specific Human AI Conversations** *AIware 2024*
2. 🏆 **Best Paper** Yasharth Bajpai*, Bhavya Chopra*, **Param Biyani**, Cagri Aslan, Sumit Gulwani, Dustin Coleman, Chris Parnin, Arjun Radhakrishna, Gustavo Soares – **Let's Fix this Together: Conversational Debugging with GitHub Copilot** *VL/HCC 2024*
3. B. Chopra*, Y. Bajpai*, **P. Biyani**, G. Soares, A. Radhakrishna, C. Parnin, and S. Gulwani – **Exploring Interaction Patterns for Debugging: Enhancing Conversational Capabilities of AI-assistants** *NAACL 2024 Workshop on HCI and NLP*
4. T.D. Nhan*, **P. Biyani***, Y. Zhang*, Andrew K.J. Jie, and C.E. Siong – **Sound Event Detection with Soft Labels Using Self-Attention Mechanisms for Global Scene Feature Extraction** *IEEE AASP DCASE 2023 Challenge, Technical Report*

WORK EXPERIENCE

Microsoft, PROSE Team

Research Fellow

Bangalore, India

October 2023 - Present

- Developed a learning technique to evaluate humans-AI conversations across varying metrics. Learns rubrics that enable fine-grained evaluation and feedback. Deployed to multiple AI assistants across Visual Studio IDE and GitHub.
- Deployment and telemetry analysis of user interactions over AI Debugger with 8,000+ daily users.
- Building an AI system that does whatever a human developer can. Automatic Planning, AI Tooling, Codebase Exploration.

Adobe, Adobe Exchange

Member of Technical Staff

Bangalore, India

July 2023 - October 2023

Product Intern

May 2022 - August 2022

- Integrated code vulnerability checks for Adobe Photoshop and InDesign plugin package upload service.
- Implemented multithreading and asynchronous calls, resulting in 60% accelerated upload speeds on Adobe Exchange.
- Designed a Marketplace Insights feature and its API contracts. The API is now used over a million times weekly.

American Express, AI Labs

Analyst Intern

Bangalore, India

January 2023 - June 2023

- Developed a custom Gini gain function that improved (1) regularization on data with high missingness and (2) generalization on multi-market models. Improved an internal version of XGBoost, aimed at credit default/fraud prediction.
- Worked with modeling teams at Amex to integrate the models into their production systems. Built a toolkit that allows modellers to track feature importance across decision tree models.
- Formulated a mixed model imputation strategy for heterogeneous mixed-missingness data.

Speech and Language Lab, NTU | 

Research Intern

NTU, Singapore

August 2022 - January 2023

- Trained convolution-augmented vision transformers to improve the acoustic feature representations of audio signals, improving F1 score our audio analysis pipeline by 10%. Developed a real-time Voice Activity Detection (VAD) system.
- Developed vision transformer models with CRNNs and self-attention to secure top five in DCASE 2023 Challenge Task4b.
- In public deployment across Singapore by Singapore Technologies Engineering Ltd for emergency event detection.

CoffeeBeans Consulting

Data Science Intern

Bangalore, India (Remote)

June 2021 - August 2021

- Built a news aggregation and processing service. Used clustering algorithms for topic modeling and BERT for sentiment analysis of reader responses. Developed a data scraping service and algorithms for filtering scraped articles.

SELECTED RESEARCH PROJECTS

RUBICON: Human-AI conversation evaluation | 📄 | 🏢

October 2023 - April 2023

Under Dr. Gustavo Soares and Dr. Arjun Radhakrishna

Microsoft PROSE

- Devised a learning technique that generates user satisfaction and domain relevant assertions from conversational data.
- Designed a custom scoring function and greedy based algorithm to select top n assertions from a larger pool of generations.
- Improved classification rate with confidence of > 0.9 by 56%, and F1 score by 16%.

Mixed Model Imputation for Mixed-Missingness Data

April 2023 - June 2023

Under Dr. Narayanan U Edakunni

American Express, AI Labs

- Ideated a novel imputation strategy that uses different imputation methods based on the type of missingness of features.
- Demonstrated its over the standard imputation methods on high-missingness financial Amex data.

Persuasive ScanPaths | Cognitive Neuroscience Lab

September 2022 - May 2023

In collaboration with Adobe MDSR Labs. Prof. Veeky Baths

- Used GANs to generate eye fixations and Scanpaths on a given text/piece of advertisement and the corresponding brain activity data (fMRI). Predicting behavioural or attitude change based on eye tracking and gaze data.
- Demonstrated consistency in results in predicting subjects' attitude change based on FMRI vs eye tracking data.

Object Detection using Spiking Neural Networks | BINN Labs | 🧠 | 📄

May 2021 - May 2022

- Studied Spiking Neural Networks (SNNs) and their applications through Spinnaker, a neuromorphic hardware, with a focus on Object Detection. Wrote a [poster](#) on the same.
- Devised a novel SNN based computational model for the Lateral Geniculate Nucleus (LGN) with the goal of mimicking the sensory perception of the human visual processing system for applications towards standard object detection tasks.

SELECTED MISC PROJECTS

- Implemented my own compiler and programming language designed specifically to program a Tetris video game | 🧠
- Implemented and compared various contrastive learning methods on the STL-10 dataset | 🧠
- Developed a racing game with cars modelled after real cars built by SAE, BITS Goa using **Blender** and **Unity 3D** on **C#**.

TEACHING ASSISTANTSHIPS

Machine Learning, Deep Learning, Foundations of Data Science, Object Oriented Programming, Computer Programming

EXTRACURRICULAR

CS Department Student Body, BITS Goa | 🧠

Academic Coordinator

- Founded the ASCII Mentorship Programme. A student led set of projects aimed at research output. Involves 24 projects offered by 37 seniors and 10 professors. More than 300 students are involved in the projects.
- Founded the Course Representative Initiative, which was successfully implemented in all department courses.

Silver Screening Club, BITS Goa

Coordinator

- Handling license procurement from movie rights distributors, theatre operations for screening movies on Campus.

TECHNICAL SKILLS

Languages: C, C++, Python, Java, C#, JavaScript, Assembly, MySQL, MATLAB

Softwares & Tools: Pytorch, Tensorflow, Blender3D, Spynnaker, SpringBoot, Unity3D, Qiskit, Photoshop, FSL

RELEVANT COURSES

Computer Science: Data Structures and Algorithms, Operating Systems, Object Oriented Programming, Database Management Systems, Computer Networks, Design and Analysis of Algorithms

ML/AI: Deep Learning, Machine Learning, Reinforcement Learning, Linguistics, Applied Statistical Methods, Cognitive Neuroscience, Computational Learning Theory (Audit)

ACHIEVEMENTS

- Best Paper Award, VL/HCC 2024; Awarded by IEEE Symposium on Visual Languages and Human-Centered Computing.
- Best Paper Presentation Award, AIware 2024; Awarded by ACM International Conference on AI-Powered Software.
- Merit Scholarship for being in the **top 3%** of students based on Academic Performance.
- Selected among ~250 students selected by Google across India to participate in the Research Week with Google 2023.