Abhijeet Prasad Bodas

Software Development Engineer, IIT Bombay graduate

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Work Experience

Goldman Sachs Services Private Limited, Bengaluru

Production Runtime Experience, Core Engineering Division

Engineering Analyst, Machine Learning Team [July 2023 - Present]

- Scaled out an **anomaly detection** model from monitoring 350 to **1600+ Kafka** consumers across **31K** partitions. Optimized realtime model's **memory** usage by **70%** and offline training time by **65%**, using **cProfile** and **numpy**
- Improved **monitoring** of realtime ML models by building probers and setting up latency tracking on **Prometheus**
- **Migrated** a timeseries forecasting library from Python 2 to **Python 3**, and published it to firm's internal **PyPI**
- Built weekly and monthly scripts for automated tracking of **product metrics**, for business review and charge-back
- As part of technical paper reading group, lead a discussion on Amazon's **MemoryDB** paper to an audience of 15+
- Conducted **4** bootcamp sessions, guiding new hires in setting up their **developer environments** and SDLC pipeline
- Awarded **Employee of the Quarter** (Q4 2024) and **Rookie of the Year** (2023) in team for highly impactful work

Summer Intern [May - July 2022]

- Enhanced **runtime** predictions for processes in a **dependency graph** using **real time** data to improve **ETA** accuracy
- Achieved upto **12%** reduction in mean absolute **errors** after training multiple ML models like **XGBoost** and **SVM**
- Implemented a **Graph Neural Network** based on **message passing** using the **PyTorch Geometric** (PyG) library in **Python** to enable the model to learn the structure of the graph, and trained the model by **masking** the child nodes
- Received a **Pre-Placement Offer** from the firm for exemplary performance and strong work ethic during the internship

Open source contributor | astral-sh/ty [Mar 2025 - Present]

An extremely fast Python type checker and language server, written in Rust.

- Implemented support for new predicates, to mark code regions after calls to functions like **sys.exit()** as unreachable
- Improved type inference on **dataclasses**, and added more checks to detect and flag more **semantic syntax errors**
- Fixed several false positive diagnostics emitted by **ty**. Got **8 Pull Requests** merged, primarily working with **Rust**

The Zulip Open Source Project

Open source threaded team chat app, used by thousands of organizations to make remote work productive and delightful.

Mentor, Google Summer of Code [Mar - July 2023]

- Mentored a student over a productive **3 month** coding period, ending with him receiving **full-time** job offer at Zulip
- Participated in **project planning** and extensive **code review**, inculcating clean code patterns and good Git practices

Student Developer, Google Summer of Code [May - Aug 2021]

- Developed the highly requested **mute users** feature which was one of the **release highlights** in the Zulip 4.0 changelog
- Fixed several bugs due to **race conditions** by using **row-level locks** and **transactions** in the **PostgreSQL** database
- Developed a new **lossless** event **queue processor** for email notifications by making use of persistent database storage
- Consolidated all the notifiability logic in a new Python **dataclass**, thus improving codebase quality, while ensuring **backwards compatibility** of the **API** and the Tornado **event queue** system to avoid issues during **server upgrade**

Academics

Indian Institute of Technology, Bombay [2019 - 2023]

- Major in Mechanical Engineering (ME) Grade: 8.67
- Minor in Computer Science and Engineering (CSE) Grade: 8.00

Other academic achievements

- Secured an All India Rank of **628** (**99.74%** percentile) in the **JEE Advanced** among **2.45 lakh** candidates [2019]
- Among top **1%** of students to receive the **KVPY** Fellowship from **1 lakh** participants, with All India Rank **717** [2018]
- Among **top 2 students** in Mumbai region in the Maharashtra **HSC** class 12th board exams in science stream [2019]

Key Projects

Parallelized Matrix Factorization [April - May 2021]

Course project: High performance scientific computing | Prof. Shivasubramanian Gopalakrishnan | IIT Bombay

- Achieved a **60% speedup** in QR factorization of matrices by parallelizing the **Modified Gram Schmidt** algorithm
- Used the **OpenMP** multiprocessing library and **Nvidia's CUDA** platform for **GPU** based parallelization in **C++**

Extracurricular Activities

- Worked as **Teaching Assistant** for courses ME316 and CH105, conducting **tutorials** and helping students with doubts
- Addressed **100+** students in a session on contributing to **Open Source** Software arranged by the Web & Coding Club