Monisha Jegadeesan

Senior Software Engineer, Google

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Education

2015-2020 **Dual Degree (B.Tech + M.Tech) in Computer Science and Engineering**
Indian Institute of Technology Madras, Chennai, India CGPA: 8.78

Professional Experience

Dec 2024 - Present **Senior Software Engineer, Google LLC, New York**
Skills: Java, Javascript, Data Compression, A/B Experimentation, Chrome Performance and Memory Tooling
- Driving the verification, testing, and integration of a bespoke data compression and storage infrastructure in Google Sheets, in order to enable a higher cell count limit per sheet, via positive effects on memory usage (and, therefore, the crash rate) as well as the latency of customer journeys that enable complex operations on large spreadsheets.
- Reducing the performance footprint of the generation and in-memory retention of the sheet view layout.

Dec 2022 - Nov 2024 **Software Engineer Level 4; Senior Software Engineer from May 2024, Google LLC, New York**
Skills: Java, Android Development, Multithreading, Performance Instrumentation and Dashboards
- Drove the Android client infrastructure effort in Keep (the Google notes app) for optimized background generation of metadata required to power core functionalities such as search, including standardization of the existing pathways.
- Led the infrastructure effort to sync textual and media data between the Android client and the server for a new type of note in Google Keep, and designed dynamic batching for network syncing, chunked local client storage, and a more optimal serialization format for local and network transfer - to support saving and collaboration in notes of larger sizes.

Aug 2020 - Nov 2022 **Software Engineer Level 3; Software Engineer Level 4 from Oct 2021, Google India, Bangalore**
Skills: C++, Java, Javascript, Closure, WebAssembly, Chrome Debugging Tooling, Source Maps, Deep Neural Models
- Led the effort to develop the infrastructure for multi-language web client spellcheck in encrypted documents by integrating an on-device spelling model in a Javascript parallel worker thread with minimal overhead on client performance.
- Led the effort to introduce a Web Assembly binary in Docs for faster on-device spellchecking, pushing for more robust debugging capabilities from the open source WASM repository, to set up a WASM developer framework in Editors.
- Led efforts for intelligent writing style suggestions on English Text for the Google Workspace Editors (Docs, Slides, etc), driving the backing natural language model development, its integration, and the client framework and UI development.

May 2019 - July 2019 **Software Engineering Intern, Google India Pvt Ltd, Bangalore**
Skills: Java, Javascript, Closure, Web Development, Unit Testing
Built the user interface - underline, and control options to undo or provide feedback on the correction, and a logging framework, for the Google Docs text auto-correction feature, leveraging the existing client software system.

May 2018 - July 2018 **Research Intern, Big Data Experience Labs, Adobe Research, Bangalore**
Skills: C, Unity, Python, Deep Neural Model Training and Testing
Developed a mobile application for Text to Scene Conversion in Augmented Reality, based on novel research techniques in neural networks, for the prediction of three-dimensional object sizes and positions from textual features.

Research Experience

Sep 2019 - May 2020 **Paraphrase Generation with a Bilingual Model and Continuous Embeddings**
Master's Thesis, ***Language Technologies Institute, Carnegie Mellon University***
Machinated a novel technique for paraphrase generation using the von Mises-Fisher (vMF) Loss on a transformer network with bilingual data for zero-shot paraphrasing, superior to that of the log-likelihood model. Guided by *Prof. Yulia Tsvetkov*.

Publications and Patents

[Publication and Poster] **Improving the Diversity of Unsupervised Paraphrasing with Embedding Outputs (Paper, Poster)**
Monisha Jegadeesan*, Sachin Kumar, John Wieting, Yulia Tsvetkov*
In **Workshop on Multilingual Representation Learning**,
The 2021 Conference on Empirical Methods in Natural Language Processing (**EMNLP 2021**)

[Publication and Poster] **Adversarial Demotion of Gender Bias in Natural Language Generation (Paper, Poster)**
Monisha Jegadeesan
In **ACM CODS-COMAD 2020** - Young Researchers' Symposium

[Poster and Filed Patent] **ARComposer: Authoring Augmented Reality Experiences through Text (Poster)**
Sumit Kumar, Paridhi Maheshwari, ***Monisha Jegadeesan****, Amrit Singhal, Kush Kumar Singh, Kundan Krishna*
In ACM User Interface Software and Technology Symposium 2019 (**ACM UIST 2019**)

[Publication and Poster] **Leveraging Ontological Knowledge for Neural Language Models (Paper, Poster)**
Ameet Deshpande, ***Monisha Jegadeesan***
In **ACM CODS-COMAD 2019** - Young Researchers' Symposium