

Malini Kar

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[github](#) | [linkedin](#)

EDUCATION

Master of Science - Natural Language Processing

University of California, Santa Cruz

Sep 2022 - Dec 2023

Santa Cruz, CA

Bachelor of Technology - Electronics & Communication Engineering

Vellore Institute of Technology

Jul 2018 - May 2022

Vellore, India

EXPERIENCE

SyncSol IT Services & Consulting

Junior Software Developer

Mar 2023 - Present

Santa Monica, CA

- Engineered the company website as the sole developer, utilizing full-stack technologies: **React, Tailwind CSS, Express.js, and PostgreSQL**.
- Innovated the development of the company e-commerce website, customizing nopCommerce to align with market trends; implemented a mobile-responsive design that improved user accessibility, **increasing the number of monthly unique customers by 20%**.
- Refactored codebase for full-stack web application in ASP.NET and demonstrated excellent analytical skills in optimizing existing code, **reducing processing time by 15%**.
- Launched a pioneering chatbot solution for the nopCommerce platform utilizing **Microsoft Bot Framework**, facilitating automated responses to frequently asked questions.

Rochester Institute of Technology

Visiting Research Scholar

Jan 2022 - May 2022

Rochester, NY

- Architected Deep Q-Networks (DQN) **reinforcement learning** algorithms to control deformable mirrors, which allowed for real-time adjustments; achieved stability in optical performance across 10+ experiments.
- Devised a hybrid workflow using Python for model development and MATLAB for processing wave-front sensor data and simulating the control environment.

PROJECTS OF INTEREST

Low Resource Language Translation with Language Adapters & RL

Mar 2023 - Dec 2023

Advised by [Prof. Ian Lane \(UCSC\)](#), [Yinka Iyinolakan \(CDIAL\)](#), [Sunipa Dev \(Google\)](#)

- Enhanced machine translation performance by 50%** over baseline performance of the M2M100 model using language adapters. Leveraged **cross-lingual transfer** via adapters, improving model performance in multiple language directions.
- Conducted rigorous evaluations of language adapters in batches, resulting in a streamlined training process that **increased translation speed by 30%** and contributed to the project's foundation.
- Documented and maintained comprehensive records of all procedures and training techniques, facilitating knowledge sharing and team collaboration.

Language Tutor Chatbot

Mar 2023 - Jun 2023

Advised by [Prof. Beth Ann Hockey \(UCSC\)](#)

- Highlighted a significant finding:** While the mT5 model achieved a higher BLEU score, error analysis revealed that Few-Shot GPT excels in intuitive language generation, in contrast to mT5's tendency to prioritize spelling correction by selecting the nearest word.
- Developed a Conversational AI system using RASA and GPT-3.5, featuring vocabulary and grammar question-answering capabilities and conversation practice, including real-time grammar correction with a T5-based model for immediate feedback, enhancing language learning experiences.

SKILLS

Languages Python | JavaScript | Java | SQL | R | C++ | C | C# | MATLAB

Technologies PyTorch | Tensorflow Keras | Docker | LangChain | Huggingface | Git CI/CD | Azure | Linux

Other Skills Feature Engineering | Statistical Modeling | Large Language Models | Generative AI