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# Yathirajan Manavalan

## Professional Summary

A software developer with 9+ years of experience building performant and robust web applications with insight into the loyalty and finance industries and payment systems. Vim and Dvorak user and a lifelong learner.

- Ruby on Rails, Typescript, React, EmberJS
- Enthusiastic about functional programming paradigms and dabbled with Haskell and Elixir. Currently learning Rust.
- Strong knowledge of OO principles and design patterns
- Extensive troubleshooting and debugging skills
- Excellent mentorship and leadership skills

## Experience

Aug-2023 – **Developer**, INSTACART, Toronto

- Present
- Taking over ownership of third party integrations service within the Professional Services Unit.
    - As part of it, I have been standardizing the various plugin implementations and the returned error responses.
    - Improving the test coverage as well adding tests for edge cases missed.
    - Creating and improving our datadog monitors.
    - Improving the usage of Sorbet within the various plugins and working on improving the availability of sorbet types from other services outside of 3PI.
  - Working closely with the loyalty team and business development to launch multiple retailer integrations and various retailer promotions.
  - Working with Data Science and running experiments to see how the integrations and the promotions are performing.

**Technologies Used:** Ruby on Rails, Sorbet, gRPC

May-2022 – **Developer**, SHOPIFY, Remote

- May-2023
- Built integrations to services in different countries to verify merchant identity and detect fraudulent ones.
  - Worked with Shopify Payments to build consumers for stripe webhooks.
  - Improved type safety within the merchant profile systems and wrote Tapioca DSL compilers to generate type signatures for internal gems that did not have type signatures.

**Technologies Used:** Ruby on Rails, Sorbet, GraphQL

Mar-2016 – **Senior Full Stack Developer**, REWARDOPS, Toronto, ON

- Apr-2022
- Architected and implemented numerous features for the Reward management system used by program managers at RewardOps and its clients
  - Was an integral part of various program launches including Aeroplan, Airmiles and US Bank Rewards and implemented an asynchronous event driven order placement flow which considerably sped up the order creation speeds and API response times.
  - Rearchitected and improved the order refund and cancellation system using event-sourcing techniques
  - Implemented a filter string parser as an open-source JS library. This library is capable of recursively parsing filter definitions with different combinations of conditions and it also has methods to update the filter strings. (<https://github.com/rewardops/javascript-filter-parser>)
  - Optimized the memory efficiency of the reporting system which drastically reduced the memory load on the servers
  - Took charge in conducting lunch and learns and improving documentation

**Technologies Used:** Ruby on Rails, React, EmberJS

## Education

2013–2015 **Master of Science, Computing Science**, *University of Alberta*, Edmonton

2006–2010 **Bachelor of Engineering, Electronics and Communication Engineering**, *Anna University*, Chennai

## Masters Thesis

Title *A Light-weight AI emotion model for NPCs in a video game*  
Supervisors Professor Vadim Bulitko  
Description This thesis explored the idea that basing NPC actions on a simulated emotion model based on fear, greed, happiness and sorrow would lead to more organic NPC reactions to player actions in a video game.

## Interests

Photography <https://500px.com/p/thunderemperor>  
Video Games Regular: DotA. Currently playing Elden Ring and Hollow Knight  
NeoVim Love tinkering with it and trying to get better.

## Publications

- [1] Yathirajan Manavalan, Vadim Bulitko, and Marcia Spetch. A lightweight algorithm for procedural generation of emotionally affected behavior and appearance. *Proceedings of the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, 11:142–148, Jun. 2021.
- [2] Yathirajan Brammadesam Manavalan and Vadim Bulitko. Appraisal of emotions from resources. In *Interactive Storytelling*, pages 224–227. Springer International Publishing, 2014.