Michael Dick

E-mail: mikedick@umich.edu
Website: http://miketdick.com/
Phone: 616-902-8922
GitHub: https://github.com/michaeld96

Education

University of Michigan - Ann Arbor

Bachelor of Science in Engineering - Computer Science, Mathematics Minor — *Sept 2019 - May 2024*

- GPA: 3.64/4.00
- **Relevant Coursework:** Applied Parallel Programming with GPUs, Computer Vision, Compilers, Game Engine Architecture, Human-Centered Software Design and Development, Data Structures and Algorithms, Intro to Computer Architecture

Experience

Hagerty

Traverse City, Michigan (Remote)

Associate Software Engineer — *May 2024 - Present*

- Developed and maintained C# and SQL-based applications, implementing bug fixes and new features to improve legacy software performance and functionality.
- Collaborated with stakeholders to design and develop business-critical applications, ensuring compliance with local ordinances and optimizing software for performance.
- Designed and deployed microservice APIs using AWS tools (SQS, S3, AWS Lambda) and Terraform, facilitating the transition from legacy systems to modern architectures.
- Utilized OpenAPI for HTTP testing and ensured robust integration and unit testing across new and existing software modules.

Amador Bioscience

Ann Arbor, Michigan

Software Engineer — *January 2023 - May 2024*

- Developed and launched 'APMX', an open-source R package designed to simplify data cleaning and formatting for PK/PD analysis, making it easier to use in NONMEM. This tool was presented at the PAGE conference in Spain.
- Implemented a testing suite using automated unit tests to ensure our code was consistently accurate and reliable. This included checking calculations and formatting with snapshots of processed data, which greatly improved the quality and dependability of our software.
- Took on a key role in coding and enhancing various functions within APMX, focusing on user-friendly features and efficient data processing. My contributions helped make complex data sets more manageable and interpretable for users.

Ann Arbor Pharmacometrics Group

Ann Arbor, Michigan

Software Engineer — *May 2022 - December 2022*

- Developed a Noncompartmental Analysis tool to assist pharmacometricians in generating exploratory plots, tables, listings, and figures. The tool facilitates easy data input and editing, allowing users to eliminate unwanted outliers. Built using R, R-Shiny, HTML, SASS, and JavaScript.
- Containerized the developed application using Docker, enhancing accessibility across various operating systems and environments, thereby making it widely available to users.
- Deployed the containerized application on Amazon Web Services using the Elastic Container Service, ensuring accurate configuration of environments and execution paths for reliable R code operation and application launch.

Projects

Game Engine: Developed a game engine from the ground up. Engine supports 2D, audio, input, and physics. Engine also supports scripting using Lua, designed with Entity Component System, and supports multi-threading. Complete with a user interface written with DearImGui *C++, Lua, SDL2, Box2D*

Rust Compiler: Implemented a compiler for a custom language named Snake. Compiler supports basic arithmetic, conditionals, loops, functions, autonomous functions, arrays, and floating point operations. *Rust*

Reverse Image Search: Fine-tunded EfficientNet B0 to 90% accuracy on a set of 5000 images to create high quality embeddings. Created a web application that allows users to upload images and find similar images. Utilized Postgres PGVector for efficient vector queries to retrieve most similar images. *Python, PyTorch, Flask, React, VectorDB, SQL*

Skills Summary

- **Languages:** C/C++, CUDA, Rust, Python, R, JavaScript, HTML, CSS, SQL, C#, Java
- **Tools:** Git, LaTeX, CMake, AWS, Docker, Podman, Postman, MariaDB, Azure DevOps
- **Frameworks/Libraries:** SDL/SDL2, ASP.NET, React, OpenGL, R-Shiny, Numpy, OpenCV