

Madhav Manoj

Summary

Full-stack developer with 6 years of experience in building web platforms, processing pipelines and mobile applications. Successfully worn multiple hats, as a UX Designer & Product Manager to build intuitive and engaging experiences. Skilled in development using React, Typescript, Rust, Python and experienced with both GCP and AWS. Interested in building well-designed products and understanding business motivations.

Details

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Experience

AspecScire

June 2017 - March 2023

Founding Engineer

- Owned multiple features end-to-end, from wireframes to APIs & UI, and finally user documentation, with a focus on usability
- Picked up domain-specific skills & knowledge to better understand user requirements and build a better product
 - Geospatial Data Processing via GDAL, QGIS, SAGA, etc.
 - Coordinate Systems, Transformations and EPSG codes
- Provided customer & production support to ensure SLAs were met and custom requirements were handled
 - Handled adhoc requests from clients, documented the required process, and later integrated features into the product
 - Methodically investigated production bugs and ways to improve performance
- Worked as a Product Manager & UX Designer to establish processes, understand user requirements and build a product roadmap
 - Created a product roadmap and a process (Kanban) to prioritize action items based on business needs, for an entirely remote team
 - Created wireframes (Mockflow) and prototypes (Figma) to help understand user requirements and iterate on the required functionality
- Provisioned and setup VMs for the service team with the appropriate software and access, using GCP Compute and AWS EC2.
- Used Docker to containerize various services, and Docker Compose to orchestrate them locally.
 - Used Docker image to create cross-platform utilities for the service team
- Wrote python scripts to address adhoc requirements and orchestrate processing
 - Drone flight plan generation so that the data collected ensures accurate outputs
 - Async processing automation (Dataset Creation to Secondary Output Generation) using open-source and third party tools.
 - Geospatial Dataset Manipulation (Raster & Vector Dataset), ensuring appropriate coordinate systems for accurate geo-referencing using GDAL & SAGA.
 - Data upload to a 3rd party platform for tiling and visualization
- Wrote & maintained the APIs for the web platform Vimana
 - Migrated the initial Python Django APIs from Python2 to Python3
 - Supplemented the Django APIs with Python Flask API microservices to add additional functionality
 - Added APIs to support mobile apps for on-site data collection & output visualization
 - Re-architected & moved the APIs to a Java Spring Boot application to improve performance
 - Moved all the APIs to a Rust monorepo to improve performance and maintainability
- Owned, re-designed & re-architected our user-facing web platform Vimana
 - Owned the entire front-end codebase and most user-facing functionality, first in Angular and later in React
 - Helped with the database design & implemented it translated requirements to a Database Design, and helped implement it.
 - Started a staged migration of the codebase from class components to functional components in React 17
 - Used Redux for global state management, react-joyride for user tutorials, and react-router for routing
- Updated the UI codebases to use modern versions of the required packages, to improve developer experience
 - Updated core packages like React & Webpack, while ensuring functionality was maintained
 - Integrated WASM modules written in Rust, to move some complex processing to the client side, improving perceived performance and usability
- Helped with the database design for a NoSQL database using Google Cloud Datastore
 - Migrated the database from Google Cloud Datastore to PostgreSQL for better maintainability
- Helped change the codebase so that it can be deployed on-premise for clients as required
 - Removed dependencies on Cloud Platform specific services
 - Replaced Google Maps with Openlayers & OpenStreetMaps
 - Replaced Mapbox with our own internal tile server & Openlayers for visualization

Protium

April 2021 - March 2022

Full-stack Developer

- Backend development
 - Integrated custom functionality on top of an open-source Process Orchestration Platform
 - Handled basic custom authentication using an open-source Identity & Access Management Platform
- Front-end Development
 - Developed a prototype web application, a mobile application, and custom forms using Formio, React, and React-Native

Dune

January 2017 - May 2017

Back-end Developer

- Implemented custom video filters using OpenGL in C++
- Exposed python APIs for these features, using Boost